Managing the "Royal Road": The London & South Western Railway 1870-1911

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Abstract

There has been considerable scholarship over the last fifty years on the causes of the late-nineteenth and early-twentieth century British railway industry's declining profitability. Nonetheless, scholars have largely avoided studying how individual companies' were managed, instead making general conclusions about the challenges industry leaders faced and the quality of their responses.

This thesis examines the management of one of the British railway industry's largest companies, the London and South Western Railway (LSWR), during the tenures of three of its General Managers: Archibald Scott, who was in the post between 1870 and 1884, Charles Scotter, who succeeded him from 1885 to 1897, and Charles Owens, who held the position between 1898 and 1911. Compared with other major British railways the LSWR's profitability ranged from being poor under Scott, to excellent under Scotter and then average under Owens. This thesis will explore what internal and external factors caused these changes. Furthermore, it considers how the business' organisational form, senior managers' career paths and directors' external business interests all played a role in shaping the company's operational efficiency and financial performance. Ultimately, the thesis will argue that while external factors were an influence on the LSWR's profitability between 1870 and 1911, primarily its financial performance was determined by the quality of the strategies and policies enacted by its directors and managers.

Ultimately, this thesis brings clarity to the existing debates and, by using the LSWR as a case study, provides important suggestions as to what actually caused the British railway industry's declining profitability between 1870 and 1911.

This thesis is dedicated to:

Mum, Dad, Hannah, Grandpa, and Chiara.

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Acknowledgements

In the last days of completing this thesis I found a quote from Sam Fay (who could plausibly be considered the star of my work) who was the London and South Western Railway's Superintendent of the Line between 1899 and 1901: 'Sometimes I feel my life has been more or less a dream, varied by happenings such as the seven years spent as Waterloo as chief clerk, when I was really unhappy.'[1] I cannot say that the last seven years I have been 'at Waterloo' were the easiest or happiest of my life, it has had its ups and downs. But what has pulled me through, what has made go on, is people like Fay and the many other characters in this thesis. Writing history is not simply the recording of memories, it is recording life as it was, the ideas dreams and aspirations of many people since past. Discovering all I could about the management of a company I have come to love has therefore been about making new and interesting friends I will never meet, and it has been these friends' that have compelled me to keep learning and writing about them.

But in this process I have been helped along the way by many. Firstly, thanks must go to my family – Mum, Dad, Hannah and Grandpa - for their support over the last seven years. Undoubtedly, I would not have got through the process of planning, researching and writing this thesis without their constant encouragement and love. I also wish to thank my wonderful girlfriend, Chiara, who in the year and a bit I have known her has always been source of love, joy and support, and has buoyed my spirits when things have got tough.

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[1] George Dow, *Great Central: Volume 2 – Fay Sets the Pace*, (3rd impression, London, 1985), p.385

I should also thank my Richmond-upon-Thames Library colleague, boss and friend Clare Thompson. Special mention should also go to Fran Early, who over the last year and a half has been a steadfast supporter of my work, has never doubted my ability to complete the thesis, has always put up with my stresses and has always supplied invaluable emotional support (and cake).

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Author's Declaration

I certify that this thesis is solely my own work. Where I have consulted the published work of others, this is always clearly attributed. Where I have quoted from the work of others, the source is always given.

Signed……

Dated……

Chapter 1 – British Railways 1870-1914

This thesis investigates the factors that shaped the London and South Western Railway's (LSWR) financial performance between 1870 and 1911. Through doing so it contributes to the debate surrounding the causes of the British railway industry's declining profitability between 1870 and 1900 and the recovery between then and 1914.

The debate on the British railway industry's declining financial performance between 1870 and 1900 has not provided satisfactory answers as to what caused this trend. Scholars have mostly utilised companies' financial results or econometric estimates to infer which factors influenced industry performance the most, while making little reference to the strategies and policies corporate decision-makers actually employed. Consequently, numerous different explanations, some of which are incompatible with each other, have been provided for the railway industry's declining profitability before 1900. Parliamentary legislation, increased material and wage costs, competition, lack of competition and decision-makers acting against the interests of shareholders have all been blamed.

Moreover, in the face of decreased industry profitability, it is generally accepted that British railway management improved after 1900. Yet, few studies have examined in detail the policies and practices directors and managers pursued. Most scholars have simply attributed the enhanced efficiency to developments in goods operations, with little reference to other economies decision-makers found. Limitations on directors' and managers' freedom to act have also been largely ignored.

I therefore consider that scholars have not yet isolated the principal factors that influenced the British railway industry's financial performance between 1870 and 1914, and therefore this thesis' significance is its contribution towards resolving this issue by examining the factors that shaped the LSWR's profitability in this period. Only Irving's study of the North Eastern Railway showed directly how a railway's policies and strategies between 1870 and 1914 impacted on its financial performance, making my study only the second of its kind.[2]

This chapter reviews previous scholarship on British railway management and profitability between 1870 and 1914, to show this thesis' value. Firstly, the nature of British railway management in this period is analysed to identify possible influences on companies' financial

[2] R.J. Irving, *The North Eastern Railway Company*, (Leicester, 1976)

performance. It thereafter examines scholars' explanations for the railway industry's declining profitability between 1870 and 1900, and the causes of a recovery that occurred between then and 1914. Finally, the LSWR's interest as a case study is discussed, after which the thesis' structure is outlined.

Section 1 – Management in the British railway industry, 1870-1914

Over the last fifty years there has been considerable scholarship on management within nineteenth and early-twentieth century British railway companies. It is important to understand this work so that the nature and workings of the LSWR's management can be compared and contrasted with industry-wide trends and developments. I have identified five strands of work on British railway management between 1870 and 1914 that are relevant to my work: who had control of railway companies' policies; railways' management structures; traffic managers' careers paths; the impact of interlocking directorships on companies' policies; and the information available to decision-makers when making decisions. The literature pertaining to these topics will now be discussed.

1.1. The 'visible hand' of management

Rowlinson, Toms and Wilson argued that the 'enduring question' of business history is 'who controls the large modern corporations?' This thesis is no different; one of its central goals is to determine who had the most influence over the LSWR's policies between 1870 and 1911, and how this impacted on its financial performance.

This thesis contributes to discussions surrounding the rise of Alfred Chandler's 'visible hand' of management within industry, where it was management, rather than investors or the market, that were most important in determining the policies and strategies companies pursued. Accordingly, Rowlinson, Toms and Wilson argued that business history is 'dominated by the consideration of managerial groups as rational strategy makers,' and in their estimation the principal purpose of this Chandlerian approach to business history is to examine the 'history of decisions taken at crucial points by managers and managerial groupings' and to 'trace the evolution of management practice as a set of techniques, designed to improve the efficiency of the organisation.'[3]

[3] Michael Rowlinson, Steven Toms and John F. Wilson, 'Competing perspectives on the 'Managerial Revolution': From 'Managerialist' to 'Anti-Managerialist, *Business History*, 49 (July, 2007), p.464-465; Geoffrey Channon, *Railways in Britain and the United States, 1830-1940*, (Aldershot, 2001) p.2

Germane to this thesis is Chandler's book *The Visible Hand,* the first part of which focussed on management within America's first large-scale businesses: the railroads. Traditionally, before 1900 their policies were perceived to have been controlled by financiers and 'robber barons'. Chandler, however, placed salaried managers centrally within his history. He argued that after the 1840s railroads' geographical growth presented challenges, such as safety issues, increased traffic volumes and increasing train speeds. Because many railroad leaders felt that coordination within the firm was superior to other forms of coordination, for example the market, they evaluated management structures and processes, resulting in salaried managers becoming more important to companies' operations. Consequently, these managers became principally responsible for formulating and controlling companies' policies. [4] Ward, for example, argued that chief executives like J. Edgar Thomson on the Pennsylvania Railroad, the Erie's D.C. McCallum, and B. Latrobe on the Baltimore and Ohio, captured policy control from the investors who owned the companies. Thus, by 1873 on the Pennsylvania 'paramount executive authority had emerged', directors were by then 'pliant acceders,' and shareholders were virtually impotent.[5] Nonetheless, despite highlighting managers' important role in the American railroad industry, Chandler showed that many companies, such as the New York Central, had no executives and their policies remained under financiers' control. [6] He therefore demonstrated that there was never an absolute rise of the 'visible hand' of management in American railroads.

1.2. Management forms in the nineteenth-century British railways

Like in America, railways were Britain's first modern large-scale businesses and remained so until at least World War One. Wardley showed that by market value railways constituted twenty-two of the top fifty largest companies nationally in 1904/5, occupying the top ten positions.[7]

Firstly, scholars generally agree that, like in the American railroad context, by the 1870s shareholders had little or no influence over British railways' policies, as Channon, Wilson and Thomson argued. Arnold and McCartney stated that because of this separation of 'ownership and control,' as Berle and Means described it in the 1930s, managers abandoned shareholder's interests, while Mitchell, Chambers, Crafts, Leunig, Mulatu, and Mills argued it led to

[4] Channon, *Railways in Britain and the United States*, p.5
[5] Alfred Chandler, *The Visible Hand: The Managerial Revolution in American Business,* (London, 1977), p.5 and p.186; James A. Ward, 'Power and Accountability on the Pennsylvania Railroad, 1846-1878', *Business History Review*, XLIX (1975), p.58
[6] Chandler, *The Visible Hand*, p.5 and p.186;
[7] Peter Wardley, 'The anatomy of big business: aspects of corporate development in the twentieth century,' *Business History*, 33 (1991), p.279

management failure before 1900.[8] Nevertheless, shareholder's weak influence over late nineteenth-century British railway companies' policies has largely been presumed by scholars. This thesis examines if this was so in the LSWR's case between 1870 and 1911.

Academics also generally agree that by the 1870s British railway companies' policies were controlled by their directors and senior managers. Chandler in *Scale and Scope*, which assessed the history of management in America, Britain and Germany, argued that British railways took on all the characteristics of large businesses by developing hierarchies of managers; a fact supported by Channon, Cassis, and Wilson and Thomson, amongst others.[9] Nevertheless, no academics have addressed the extent to which British railway managers between 1870 and 1914 influenced companies' policies or, in more extreme scenarios, usurped the decision-making authority of their boards. Channon posed two specific questions; 'Where in…[companies] were 'high' and 'low' order decisions made' and 'who controlled information, and therefore policy options?'[10]

These questions can begin to be answered for nineteenth-century British railway companies by analysing their management structures. Bonavia and Channon argued that most, if not all companies had adopted functional department structures as the standard pattern of operation by the 1850s and 1860s. Under the board and General Manager, departments had particular functions, for example locomotive construction and maintenance, engineering, traffic movement or cartage. The heads of these departments only reported to those above them in the hierarchy, with departmental officials having little mutual contact below senior management level. Within the departments there also usually existed geographical districts and divisions, usually headed by superintendents who reported to those above them in the management structure (see Figure

[8] John F. Wilson and Andrew Thomson, *The Making of Modern Management: British Management in Historical Perspective*, (Oxford, 2006) p.56; Channon, *Railways in Britain and the United States, 1830-1940*, p.107; A.J. Arnold and S. McCartney, 'Rates of return, concentration levels and strategic change in the British railway industry, 1830-1912', *Journal of Transport History*, 26 (2005) p.54-57; Brian Mitchell, David Chambers, and Nick Crafts, 'How good was the profitability of British railways 1870-1912?', *Economic History Review*, 64 (2011) p.829; A.A. Berle, and G.C. Means, *The Modern Corporation and Private Property*, (New York, 1932); Nicholas Crafts, Timothy Leunig, and Abay Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', *The Economic History Review*, 64 (2011), p.355; Nicholas Crafts, Terence C. Mills, and Abay Mulatu, 'Total factor productivity growth on Britain's railways, 1852–1912: a reappraisal of the evidence', *Explorations in Economic History*, 44 (2007), p.632

[9] Alfred D. Chandler, *Scale and Scope: the Dynamics of Industrial Capitalism*, (London, 1990) p.253; Channon, *Railways in Britain and the United States*, p.22; Yousseff Cassis, 'Big Business: Big Business and the First Industrial Revolution' in Geoffrey Jones and Jonathan Zeitlin, (eds.), *The Oxford Handbook of Business History*, (Oxford, 2009) pp.176

[10] Channon, *Railways in Britain and the United States, 1830-1940*, p.44

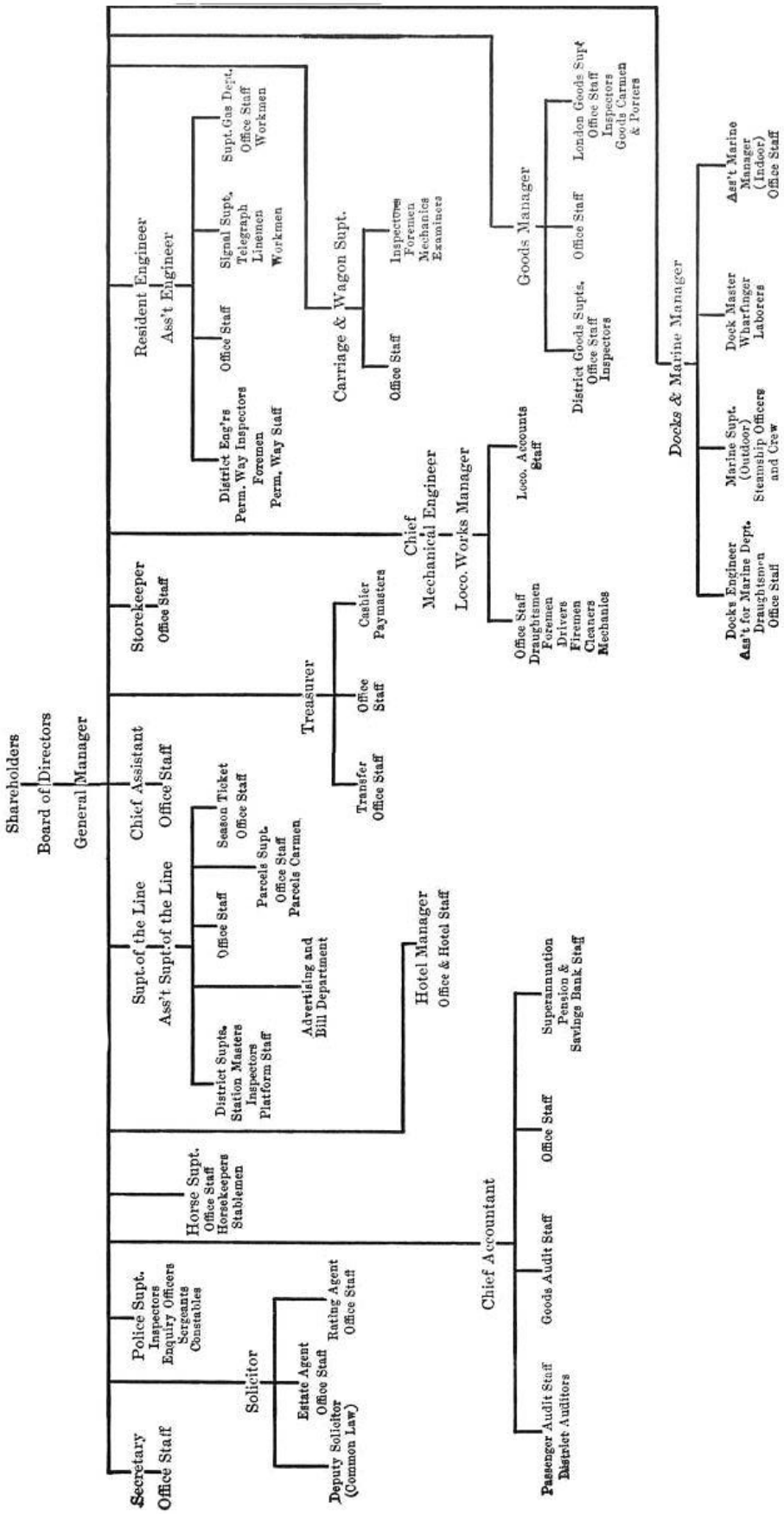

Figure 1: A 'typical' British railway management structure in 1910, Source: Ray Morris, *Railroad Administration*, (New York, 1910), p.133

1)[11] Before 1914 few British railways' management structures deviated from this pattern of operation; only the North Eastern (NER) and the Great Northern Railways' (GNR) did so from around 1900 by separating the commercial and operating sides of their businesses, which clarified functions along what Irving called 'natural lines'.[12] Therefore, the question is why there was so little change in companies' corporate forms? Chandler argued that British railway companies' smaller geographical size meant managers were not challenged to the same extent as their American counterparts to pioneer more advanced forms of organisation.[13] Alternatively, Channon suggested that functional department structures persisted within British railways because department heads vied for resources and guarded their own authority.[14] This thesis supports the first argument; the LSWR's overall management structure was not altered between 1870 and 1911 because decision-makers were never under pressure from any source to do so.

Scholars have generally described how features of functional department structures possibly, and usually negatively, impact on business' performance. Wilson and Thomson argued they require many specialist managers to run departments, as well as production and distribution functions lower down the hierarchy. More importantly, within functional structures decision-making authority is highly centralised, and, thus, Quail argued that this may weaken businesses performance given directors' disinclination to delegate responsibility to individuals in 'functional and production posts.'[15] Indeed, as this chapter shows, scholars have highlighted how such structures negatively impacted on British railways' financial performance and management quality before 1914.[16] Following this trend, one of the thesis' central arguments is that because the LSWR utilised a functional department structure between 1870 and 1911, its business performance was frequently undermined by its policies and strategies being formulated by a small number of individuals at the organisation's head.

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[11] Michael R. Bonavia, *The Organisation of British Railways*, (Shepperton, 1971) p.21-23; Ray Morris, *Railroad Administration*, (New York, 1910), p.132; Channon, *Railways in Britain and the United States, 1830-1940*, p.41-42

[12] Bonavia, *The Organisation of British Railways*, p.16; Channon, *Railways in Britain and the United States*, p.41-42; T.R. Gourvish, 'British business and the transition to a corporate economy,' *Business History*, 29 (1987), p.26; Irving, *The North Eastern Railway*, p.255

[13] Chandler, *Scale and Scope,* p.253

[14] Channon, *Railways in Britain and the United States, 1830-1940*, p.42

[15] Wilson and Thomson, *The Making of Modern Management*, p.12; John Quail, 'The Proprietorial Theory of the Firm and its Consequences', discussed in Wilson and Thomson *The Making of Modern Management*, p.13

[16] Bonavia, *The Organisation of British Railways*, p.21-23, *Railways in Britain and the United States, 1830-1940*, p. 41-42 and p.107

1.3. The rise of the 'visible hand' in the British railway context?

If decision-making authority within British railway companies was held by a handful of individuals at the organisation's head, an important consideration is whether management acquired control of their policies after 1870 – as per the Chandlerian paradigm. Cain argued that by the 1870s chief executives were the industry's single most important decision-makers and Channon stated that 'managerial ascendency cannot be assumed before 1870.[17] Nevertheless, a brief historical survey reveals that managerial ascendency cannot be assumed at all within the British railway industry between 1870 and 1914, as cases have been found where both directors and managers controlled major companies' strategic direction.

Before 1900, cases can be found where boards or individual directors had considerable or absolute charge of companies' policies; for example Richard Moon's domineering chairmanship of the London and North Western Railway (LNWR) between 1861 and 1893; Robert Cecil, the Great Eastern Railway's (GER) chairman, saving it from ruin between 1868 and 1872, and the fact that the Great Northern Railway's (GNR) board between the 1850s and 1870s felt 'they knew more about the business than the company's senior officers.' Furthermore, after George Gibb left as the NER's General Manager in 1906 the board re-asserted control over the company's affairs.[18]

Alternatively, some senior managers came to dominate major railway companies' policies. George Gibb dominated the NER's strategic direction between 1891 and 1906; two managers, Granet and Paget, controlled the Midland Railway's policies after 1900; while Sam Fay had a similar level of influence over the Great Central Railway's (GCR) policies in the same period.[19]

Cases also exist after 1870 where ex-railwaymen were raised to companies' boards and then dominated their strategic direction; for example James Staats Forbes' chairmanship of the London, Chatham and Dover (LCDR) and Metropolitan District Railways (MDR); Daniel Gooch's time as chairman of the Great Western Railway (GWR) between 1865 and 1889; and Sir Edward

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[17] P.J. Cain, 'Railways 1870-1914: the maturity of the private system,' *in* Michael J. Freeman, and Derek H. Aldcroft, *Transport in Victorian Britain,* pp.112; Channon, *Railways in Britain and the United States, 1830-1940*, (Manchester, 1988), p.44

[18] Braine, *The Railway Moon*; Irving, *The North Eastern Railway Company*, p.261-264; T.C. Barker, 'Lord Salisbury, Chairman of the Great Eastern Railway 1868-1872' in S. Marriner, *Business and Businessmen: Studies in Business, Economic and Accounting History*, (Liverpool, 1972), 81-103; Jack Simmons, *The Railway in England and Wales 1830-1914*, (Leicester, 1978), p.247

[19] Irving, *The North Eastern Railway Company*, p.261-264; E.G. Barnes, *The Midland Main Line – 1875-1922*, (London, 1969), p.226; Jack Simmons, 'Fay, Sir Sam,' in Jack Simmons and Gordon Biddle (eds.) *The Oxford Companion to British Railway History*, (Oxford, 1997), pp.136

Watkin's chairmanship of the Manchester, Sheffield and Lincolnshire (MSLR), South Eastern (SER) and Metropolitan Railways.[20]

In sum, with such a variance in who controlled, or at very least heavily influenced British railway companies' policies between 1870 and 1914, an industry-wide rise in the 'visible hand' of management cannot be presumed in this period. This thesis reinforces this conclusion by demonstrating how at different points after 1870 both directors and senior managers dominated the LSWR's strategic direction.

It is important to understand who controlled railway companies' financial performance because this potentially impacted on their business performance. As Raff, Lamoreaux and Temin argued of business generally, managers and directors can possibly have unaligned or conflicting aims when formulating policies and strategies, causing disagreements over companies' strategic direction. For example, directors may be interested in maximising company profits, whereas managers can prioritise personal benefits, job-security or career progression.[21] This thesis therefore describes the objectives of the LSWR's directors, General Managers, and department heads between 1870 and 1911, and shows how the interactions between their views and objectives impacted on the company's management quality and overall financial performance.

1.4. Directors' goals and the benefits and drawbacks of interlocking directorships

Apart from simply identifying what LSWR directors and managers' immediate objectives were, this thesis also determines how their careers, lives and backgrounds shaped the policies and strategies they adopted. The general scholarship on topic is discussed in the next two sections.

Considerable literature exists on why individuals join boards, the goals they wish to pursue once appointed, and how this influenced companies' management quality. Much of this work pertains to how interlocking directorships impact on performance, which are defined as where 'one person affiliated with one organization sits on the board of directors of another organization.'[22]

[20] T.R. Gourvish, 'The performance of British railway management after 1860: The Railways of Watkin and Forbes,' *Business History*, 20 (1978); Cain, 'Railways 1870-1914, pp.113

[21] Naomi R. Lamoreaux, Raff, M.G. Daniel and Peter Temin, 'Economic Theory and Business History,' Jones, and Zeitlin, (eds.), *The Oxford Handbook of Business History*, pp.45-46

[22] Mizruchi, M. 'What do interlocks do? An analysis, critique, and assessment of research on interlocking directorates.' *Annual Review of Sociology,* No. 22, (1996) p.271

Modern business studies literature has highlighted interlocking directorships' positive effects on companies' performance. Schoorman, Bazerman and Atkin argued that such relationships are used by businesses to improve contractual relationships, reducing uncertainty in the trading environment. Burt similarly argued that directorial interlocks possibly allow one company to control another without the need to acquire them, again reducing uncertainty.[23] Mizruchi and Stearns have also identified that interlocking directorships may allow firms to monitor each other's activities, which may benefit their performance; while Davis highlighted the possibility companies use interlocks to gain information on innovative business practices used elsewhere in industry. Furthermore, Perry and Peyer argued that firms could enhance their value if their directors were appointed to a company board in related industries or the same economic sector. Lastly, Fama and Jensen contended that directors who obtained multiple directorships could acquire prestige within their industry, further adding value to the firms of which they were board members.[24]

Nonetheless, interlocking directorships have received criticism. Ferris, Jagannathan and Pritchard contended that individuals with multiple directorships may be over-committed, leading them to neglect their responsibilities within all the firms of which they were a director. Consequently, this may hinder the effective monitoring of managers, giving them the freedom to pursue their own interests to the detriment of company profitability. Indeed, Fich and Shivdasani's study of modern businesses showed that companies where the majority of directors possessed three or more other directorships had lower profitability and operating returns on sales. Conversely, the value of companies where most directors had below three external directorial commitments was on average 4.2 percent higher than those where the majority of board members had more.[25]

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[23] F.D. Schoorman, M. H. Bazerman, and R. S. Atkin., 'Interlocking Directorates: A Strategy for Reducing Environmental Uncertainty.' *Academy of Management Review,* No. 6, (1981) p.249; R. Burt, Corporate Profits and Cooptation: Networks of Market Constraints and Directorate Ties in the American Economy (New York, 1983) *Cited in*, David F. Larker, Richardson, A. Scott Seary, J. Andrew and Irem Tuna, 'Director Networks, Executive Compensation, and Organizational Performance,' *Working Paper,* (2005), p.11

[24] M.S. Mizruchi and L.B. Stearns, 'A longitudinal study of borrowing by large American Corporations,' *Administrative Science Quarterly,* No. 39 (1994), 118-140; G.F. Davis, 'Agents without principles? The spread of the poison pill through the intercorporate network' *Administrative Science Quarterly*, 1991, No. 36, 583-613, *Cited in* Mariëlle C. Non, and Philip Hans Franses, 'Interlocking Boards and Firm Performance: Evidence from a New Panel Database,' *TI 2007-034/2 Discussion Paper,* (Erasmus University, Rotterdam, 2007), p.1; T. Perry, and U. Peyer, 'Board Seat Accumulation by Executives: A Shareholder's perspective,' *Journal of Finance*, 60 (2005) p.2121 ; E.F. Fama, and M.C. Jensen, 'Separation of Ownership and Control,' *Journal of Law and Economics*, Vol.26 No.1 (1983), 301-325, *Cited In*, Ettore Croci, and Rosanna Grassi, 'The economic effect of interlocking directorates in Italy: New evidence using centrality measures,' *working paper*, (2010), p.7

[25] Stephen P. Ferris, Murali Jagannathan and C. Pritchard, 'Too Busy to Mind the Business? Monitoring by Directors with Multiple Board Appointments,' *Journal of Finance*, 58 (2003), p.1109-1110; E. Fich and A. Shivdasani, 'Are Busy Boards Effective Monitors?,' *Journal of Finance*, 61 (2006) p.721

Naturally, the way late nineteenth and early-twentieth railway directors engaged with their businesses will be different from directors in modern business environments. Nonetheless, these studies have shown the importance of considering how LSWR directors' external business activities may have impacted on the company's financial performance between 1870 and 1911. Indeed, this thesis shows that throughout the period they did have an effect.

1.5. The nature of the late nineteenth and early-twentieth century railway director.

The business backgrounds of nineteenth and early-twentieth century railway directors – which potentially influenced companies' policies (see Section 1.6) - can, I consider, be roughly be split into five groups; merchants, individuals in finance, industrialists, the landed and ex-railwaymen. What follows is a survey of these five groups to ascertain, insomuch as is possible, when and why such individuals became railway company directors. Nevertheless, because the scholarship on British railway company directors' backgrounds between 1830 and 1914 is limited, the following survey demonstrates the need for more detailed study on this topic; something this thesis provides in the LSWR's case. [26]

Merchants

Scholars have generally considered that merchants dominated railway companies' boards in the early years of the industry and Bonavia argued that in 1830s and 1840s railway directors were predominantly individuals with 'a financial interest in better transport'. For example, he stated that the GWR was promoted and formed by a committee of Bristol-based businessmen representing various local bodies such as the 'Bristol Corporation, the Society of Merchant Venturers, The Bristol Dock Company and the Bristol and Gloucestershire Railway.' Nevertheless, Channon's research on the same company showed that by the 1870s it had moved away from recruiting merchants as directors, favouring shipping magnates such as 'Bates, Brocklebank, Cunard and Maciver' because of their valued connections in international trade and commerce.[27]

[26] Channon, *Railways in Britain and the United States, 1830-1840*, p.159
[27] Bonavia, *The Organisation of British Railways*, p.10-11; Channon, *Railways in Britain and the United States*, p.184

Bankers

Bankers were appointed to railway companies' boards throughout the nineteenth and early-twentieth century; even if the extent of their presence varied across the period. Some of the most prominent individuals on the boards of the early railways were bankers, for example George Carr Glynn the LNWR chairman. Yet, in the GWR's case Channon stated that between the 1830s and 1910s few of its directors had their primary interest in banking, although the number for whom it became a secondary activity increased, especially after 1870. Between 1881 and 1885 23.8 percent of GWR directors held positions in finance; but by the period 1906 to 1910 the proportion had risen to 31.6 percent. Channon argued railways, due to their high debt-equity ratio, recruited bankers because such links to financial institutions gave them access to capital on 'favourable terms'.[28]

Industrialists

The role of industrialists on railway companies' boards in the period is unclear, but the evidence suggests it was limited. Channon showed that between 1833 and 1915 only nineteen of the 106 directors that served on the GWR's board had interests in 'manufacturing and industry' and 'Food Drink and Tobacco', and the number representing these economic sectors only increased after 1900 when individuals were recruited who were involved in 'important' firms on the company's network. Alternatively, Irving argued that between 1872 and 1900 the NER board was constituted of 'industrialists and those actively engaged in the trade and commerce of the region', and it appointed new directors because they headed their 'respective callings in the different areas served by the company.' Nonetheless, Irving argued that the NER's board constitution was unique within the British railway industry; suggesting that industrialists' level of involvement in the GWR was more typical within the British railway industry before 1914.[29]

Aristocrats and Landed Gentry

Aristocrats and landed gentry had a prominent role on British railway companies' boards between the 1830s and 1914. Channon argued that while initially such individuals joined the GWR's board to develop the resources within their estates, they soon came to appreciate the

[28] John Scott and Catherine Griff, *Directors of Industry: The British Corporate Network 1904-1976*, (Oxford, 1984), p.49-50; Channon, *Railways in Britain and the United States*, p.191 and p.168
[29] Channon, *Railways in Britain and the United States*, p.184-185; Irving*, The North Eastern Railway Company*, p.131

benefit of owning railway stocks and shares. However, the literature suggests that after 1870 landed individuals played their most prominent role on railway companies' boards. Channon showed that between 1876 and 1895 nine of the GWR's twenty-one directors (forty-three percent) had 'land and agriculture' as their primary occupation. Stanworth and Giddens showed that seventy-eight percent of railway company chairmen born between 1820 and 1939 had 'upper class' origins, with forty-three percent having parents who appeared in *Burke's Peerage*. Indeed, the period when the most landed chairmen were born was between 1820 and 1859, meaning they would have taken up their positions from around 1870 onwards. Channon argued that landed individuals' significant uptake of railway directorships after 1870 was because they were diversifying their portfolios at a time when income from their estates possibly worsened due to the agricultural recession.[30]

Ex-Railwaymen

Numerous railway companies appointed ex-railwaymen as directors in the nineteenth-century, possibly suggesting that such directorships were designed to retain an individuals' expertise or reward them for services rendered. Gourvish showed that between 1870 and 1889 six out of fifteen (forty percent) railway company chief executives became directors on retirement; with the proportion increasing to eighteen out of twenty-eight (sixty-eight percent) between 1890 and 1909. Overall, however, the literature suggests that between the 1830s and 1914 few railways' directors had worked in the industry. Channon argued that within the GWR a strict separation of powers existed between directorate and management, and only two of the company's senior managers, Gooch and Saunders, were appointed to the board.[31] Furthermore, Stanworth and Giddens also showed that a 'minute' number of professional railwaymen rose to become companies' chairmen.'[32]

[30] Barker, 'Lord Salisbury, Chairman of the Great Eastern Railway 1868-1872' in Marriner, *Business and Businessmen*, 81-103; Channon, *Railways in Britain and the United States*, p.212, p.202, p.213, p.184 ; Philip Stanworth and Anthony Giddens, *Elites and Power in British Society*, (Cambridge, 1969) p. 98

[31] Channon, *Railways in Britain and the United* States, p.160

[32] Hodgkins, *The Second Railway King*, various pages; T.R. Gourvish, 'A British Business Elite: The Chief Executive Managers of the Railway Industry, 1850-1922', *Business History Review*, 47, (Autumn, 1973), p.311; Stanworth, and Giddens, *Elites and Power in British Society*, p.77-78, 96

Conclusion

This survey of the business background of British railway directors' between the 1830s and 1914 has demonstrated the paucity of information that exists on the subject. Indeed, only Channon's work on the GWR's board, cited extensively above, has comprehensively investigated the business interests of a single railway company's directorate. This thesis is therefore important as it examines how the primary occupations and interlocking directorships of the LSWR's directorate changed between 1870 and 1911.

1.6. Interlocking directorships and railway companies' policies

Given that decision-making authority within the LSWR was highly centralised between 1870 and 1911, this thesis also investigates how directors' external business interests influenced the policies and strategies the company adopted. Only three previous studies of British railways' boards have addressed this matter. These were Channon's study of the GWR's board between 1833 and 1947, Hughes' analysis of the London and North Eastern Railway's (LNER) directorate between 1923 and 1947 (and therefore outside my period) and Irving's study of the NER between 1870 and 1914.

Channon and Hughes' studies never firmly established how directors' external business interests shaped their railways' policies or strategies. Only Hughes' work suggested how the LNER's policies and financial performance may have been influenced by its directors' external business activities. He argued that by observing 'the occupations of the fifty-one directors, it is difficult to find more than a handful whose outside interests did not conflict with their responsibility to the railway.' For example, some directors were involved in coal, iron and steel businesses within the area the LNER served, possibly allowing them to influence its policies in the favour of these interests.[33] Yet, Hughes only speculated that directors' external directorships influenced LNER policy, he did not show where they actually did. Channon similarly did not show how the GWR directors' external business activities influenced its policies, concluding that:

> '…the anatomy of the GWR's board – of where its members originated, their education, wealth, social status, economic connections… suggests very little about

[33] Geoffrey Hughes, 'The Board of Directors of the London & North Eastern Railway,' *Journal of Transport History*, 3rd Series 13 (1992) p.169-175

what it all meant for the management performance of the company or for the railways as a whole.'[34]

For him 'certain questions, especially those to do with operating policies and company performance, require a more disaggregated, contextualised approach'; something this thesis provides in the LSWR's case.[35]

Irving's study established better the links between the NER's policies and its directors' external business interests. He argued that because the board consisted of 'industrialists and those actively engaged in the trade and commerce of the region,' the directorate was not greatly interested in railway affairs, but managed the company's resources 'in such a way as to satisfy local industry and the shareholders.' Irving therefore considered the NER acted as a 'holding company' for the region's industry. Nonetheless, given he considered the constitution of this directorate to be 'unique' within the British railway industry between 1870 and 1914, this may suggest its approach to company policy was also atypical.[36]

What has, however, been established in the literature is that between 1870 and 1914 railway company directors took up many positions on the boards of other transport concerns, in many cases to benefit the railway. Channon showed that between 1881 and 1885 48.6 percent of GWR directors sat on other foreign and domestic railway companies' boards, constituting 69.0 percent of all the directorships they held. By the period 1906 to 1910 these proportions were still large, despite declining to 30.9 and 46.9 percent respectively.[37] The strength of inter-railway interlocks before 1914 was confirmed by Scott and Griff. They examined the networks that existed amongst directors of Britain's major railway companies in 1904. The directors of nineteen out of thirty-four main line companies had interlocking directorships with other railways, with two major networks being identified amongst them. One was centred on the LNWR and Central London Railways, while the other was centred on the Midland Railway.[38]

It has been argued that such interlocks existed because of the policies and strategies the railways were pursuing. Channon suggested the GWR used interlocking directorships to control the policies of domestic 'feeder' railways and dock companies it had a financial and operational interest in. Indeed, to an extent this eliminated the need for the company to pursue costly

[34] Channon, *Railways in Britain and the United* States, p.191
[35] Channon, *Railways in Britain and the United States*, p.191
[36] Irving, *The North Eastern Railway Company*, p.131-138
[37] Channon, *Railways in Britain and the United States*, p.188
[38] Scott and Griff, *Directors of Industry*, p.78-79

mergers or purchases to gain control over elements within its business environment.[39] Alternatively, Scott and Griff argued that most interlocks between companies in 1904 were 'not strictly horizontal,' as they did not exist between railways operating competing routes. However, numerous interlocks existed between adjacent railways. These facilitated cooperation between them, allowing them to better secure through routes and engage in competition with other companies.[40]

This short survey therefore shows the paucity of research that exists on how railway companies' policies were influenced by directors' interlocking directorships. This thesis' importance to the literature is, therefore, that it attempts to establish, as far as is possible, how the LSWR's policies and financial performance was determined by its directors' activities outside the company.

1.7. Traffic managers careers before 1914

While between 1870 and 1914 railways' policies and strategies were possibly influenced by directors' objectives, senior managers, who also had the position within the industry to shape companies' strategic course, may have had divergent or opposite goals because of the nature of their careers and working experiences. Therefore, this thesis examines senior LSWR traffic managers' career – the Traffic Department being the most important department to the company's strategic direction – to determine how these shaped their views and opinions on railway policy and strategy.

Traffic manager's careers

Howlett undertook the most detailed work on a nineteenth-century railway's internal labour markets (ILM) by studying promotional ladders within the GER's Traffic Department after 1870. He argued that within British railway companies there developed two ILMs; a primary ILM, encompassing salaried employees (clerks, managers), and a secondary ILM, in which most other staff members were employed.[41] These ILMs developed by the 1870s because the railway had internalised their process of recruitment, where initially they had engaged the external labour market. Such systems reduced companies' labour turnover, reduced the search costs that engaging the external labour market incurred, and diminished uncertainty of labour supply.

[39] Channon, *Railways in Britain and the United States*, p.188
[40] Scott and Griff, *Directors of Industry*, p.79
[41] Peter Howlett, 'The Internal Labour Dynamics of the Great Eastern Railway Company, 1870-1913', *Economic History Review* Vol. LVII, No.2 (2004), p.404

Furthermore, ILMs meant companies could train individuals knowing their investment would not be wasted.[42]

Traffic managers were usually employed in railways' primary ILMs between 1870 and 1914, yet these have received far less analysis than companies' secondary ILMs. There is general consensus that by the 1870s the railway industry's clerks – who populated primary ILMs below management level – were locked into rigid promotional ladders within the companies that had recruited them. Howlett argued that recruitment to primary ILMs was limited to a few entry points, usually at the bottom of the promotional tree, with higher positions being filled predominantly by internal promotion from below. Indeed, Strangleman argued that for blue-collar workers employment patterns became 'increasingly dependent on seniority, vacancies being increasingly filled by the senior applicant in the grade or company, underpinned by formal rules based on length of service.' These rigid promotional structures were buttressed by companies' department structures which did not give much, if any room for cross-departmental movement within companies. It was also uncommon for employees to move from the secondary ILM to the primary.[43] Lastly, Gourvish demonstrated and Pollins argued that when managers did leave the railways that recruited them they predominantly moved to other companies within the industry. Consequently, because of these facets of railways' primary ILMs, Wilson and Thomson argued that before 1914 they had a 'highly introverted approach to [management] recruitment,' while Pollins stated railway managers were in-bred. Nevertheless, Gourvish did argue that between 1850 and 1922 a significant number of British railways' chief executives had had employment experiences outside of the industry at some point in their careers.[44]

It should also be considered, as Kingsford and Bagwell argued, that as the railway industry matured clerks' promotional prospects within primary ILMs decreased as managers shrunk as a proportion of railway employees. Indeed, Savage statistically showed that GWR employees took longer to be promoted into supervisory posts later in the company's history (Station Master, Foreman etc.); this duration after their first promotion on average increasing from nine years between 1870 and 1889 to seventeen years between 1890 and 1915.[45]

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[42] Peter Howlett, 'Evidence of the Existence of an internal Labour Market in the Great Eastern Railway Company, 1875-1905' *Business History* , Vol. 42 No.1 (2000) p.22

[43] Howlett, 'The Internal Labour Dynamics of the Great Eastern Railway Company,' p.397; Tim Strangleman, *Work Identity at the End of the Line: Privatisation and Culture Change in the UK Rail Industry*, (London, 2004), p.23

[44] Wilson and Thomson, *The Making of Modern Management*, p.58; Harold Pollins, *Britain's Railways: an Industrial History*, (Newton Abbott, 1971), p.68; Gourvish, 'A British Business Elite',p.297-299, p.315

[45] P.W. Kingsford, *Victorian Railwaymen*, (London, 1970) p.129; Philip Bagwell, *The Railwaymen: A History of the National Union of Railwaymen*, (London, 1961) p.67; Mike Savage, 'Discipline, Surveillance and the

These studies are, however, the extent of the existing research on British railway companies' primary ILMs between 1870 and 1914, and there has never been a dedicated study on the subject. This is surprising given that the products of these labour markets, the industry's senior managers, were important influences on railways' financial performance in the period. Therefore, by analysing in detail the LSWR's primary ILM between 1870 and 1911, this thesis is a significant first study of this topic.

Traffic Manager's outlooks

Indeed, building on this research, this thesis explores how the LSWR's primary ILM shaped senior traffic managers' perspectives on railway management and policy between 1870 and 1911.

It was generally recognised from the 1890s that railways' rigidly hierarchical primary ILMs produced managers whose experience of the many facets of railway work was limited, as was their capacity to think creatively. George Gibb, the NER's General Manager between 1891 and 1906, felt managers who had risen through the company's ranks possessed a 'narrowness of vision.'[46] Stephenson, a lecturer at the London School of Economics (LSE) Railway Department, stated in 1911 that the clerks who attended his lectures came 'from a variety of departments and offices. In many cases their knowledge of railway work is confined strictly to the limits of work done in their own departments, and often to only a small section of such work. Of the rest of the work of the railway they are supremely ignorant.'[47]

The inability of British railway managers to think creatively and innovate has been recognised more recently by scholars between 1870 and 1914. Gourvish suggested that to some extent within the industry there was 'excessive adherence to tradition and a consequent fear of innovation,' and managers were not incentivised to 'act opportunistically.' Consequently, operating practices established in the 1870s and 1880s were not modernised. Indeed, with creativity limited in the industry it is unsurprising that Arnold and McCartney called the whole period between 1870 and 1914 one of 'structural stasis.'[48] Nevertheless, as Thomson and Wilson argued of British industry generally, it was hard for companies to change recruitment patterns

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'Career': Employment on the Great Western Railway 1833-1914,' in Alan McKinlay and Ken Starkey (eds.), *Foucault, Management and Organizational Theory* (London, 1998), p.86

[46] Irving, *The North Eastern Railway Company*, p.216

[47] London School of Economics Archive [LSE], Minutes, 14/2/1, 1904-1911, Memorandum by Mr Stephenson to the Advisory Committee on Railway Subjects, 13 February 1911

[48] Arnold and McCartney, 'Rates of return', p.57; Gourvish, 'A British Business Elite', p.297

given the 'highly path-dependent nature of British management history' and 'the strength of the embedded processes that persisted for so long.'[49]

Nonetheless, despite the consensus that railway managers were institutionalised and conservative in outlook by the late nineteenth-century, only Irving's study of the NER suggested how this thinking directly affected a railway's policies and financial performance. This thesis therefore attempts to do this in the LSWR's case, adding a valuable second study to the literature. Indeed, it does this at the same time as determining the effect on its financial performance of the degree of alignment between managers' and directors' views on corporate policy and strategy.

1.8. General Managers, traffic managers and other agents within the firm

Given that this thesis argues that the LSWR's financial performance between 1870 and 1911 was principally determined by those at the organisation's head, it importantly establishes how department heads' actions may have influenced corporate policies. Principally, scholars have discussed how department heads' actions negatively affected railways' profitability in the period.

Because department heads had almost complete authority within their functionally independent departments, conflicts could possibly arise between them where their interests overlapped. Bonavia described one such conflict. When planning train movements Traffic Departments, headed by superintendents of the line, would require use of variable numbers of locomotives at different times of the year dependent on seasonal traffic levels. Yet, locomotive superintendents, who usually managed companies' locomotive works, needed to plan locomotive maintenance so as not to overwhelm the works or render them idle. They therefore preferred locomotives to enter the works at a steady rate through the year. As such, Bonavia argued there was a tendency for 'friction to develop' between these department heads as they were required to manage the company's locomotives in different ways. Indeed, he stated that in some cases inter-departmental conflicts continued for years, damaging corporate efficiency.[50]

Scholars have also suggested that department heads could harm companies' efficient operation in other ways. Bonavia argued they could possibly become overly concerned with the operational

[49] Wilson and Thomson, *The Making of Modern Management*, p.52
[50] Bonavia, *The Organisation of British Railways,* p.17-18 and p.153-154; Channon, *Railways in Britain and the United States, 1830-1940*, p.42

efficiency of their own departments, neglecting consideration of the company's overall revenue position.[51] Channon concurred, stating that because departments were 'strong and isolated' that for the 'spending departments', such as engineering, 'technical efficiency and engineering values were stressed rather than financial costs.' He considered that Locomotive Superintendents particularly may have self-identified as having an elevated 'professional identity.'[52] Unsurprisingly, Gibb recognised that such issues existed within the NER, and Irving stated its functional department structure meant that the inherent:

> …separation made for excessive sectional loyalty with each department regarding its particular function as an end in itself. By carrying out functions with regard to departmental rather than functional interests…waste and extravagance was often the result.[53]

It was the problems with railways' traditional functional structures that Gibb was trying to solve when he reorganised the NER's departments into 'commercial' and 'operating' functions in 1902 (see section 1.2). Irving argued that the new arrangement contributed to improving the company's efficiency by 'eliminating dual control and clarifying [operating and commercial] functions along their natural lines.' However, despite the restructuring, the Locomotive and Engineering Departments' position remained unchanged, and with each department answering to 'their own head and conscious of its own importance, full efficiency was not achieved.' Thus, while some efficiency gains resulted from Gibb's reorganisation of the NER's structure, the operating weaknesses of British railways' traditional functional structures were never eliminated.[54]

The existence within railways that utilised functional department structures of the issues outlined suggests that responsibility for getting department chiefs to cooperate and consider issues beyond their departments lay with those at the organisation's head: the directors and General Managers. Yet, Channon stated the extent to which General Manager had the 'authority, skill and energy' to persuade department heads to cooperate was unclear.[55] Furthermore, both he and Bonavia argued that because department heads met directly with board sub-committees, which oversaw particular company functions, they could directly influence the decisions directors made

[51] Bonavia, *The Organisation of British Railways,* p.153-154
[52] Bonavia, *The Organisation of British Railways,* p.153-154; Channon, *Railways in Britain and the United States, 1830-1940*, p.42 and p.284
[53] Irving, *The North Eastern Railway Company*, p.256
[54] Irving, *The North Eastern Railway Company*, p.255-256
[55] Channon, *Railways in Britain and the United States, 1830-1940*, p.42

in their favour or in ways that conflicted with the goals of the General Manager or other decision-makers. This too had the potential to weaken companies' internal cohesiveness, efficiency and profitability.[56]

In sum, this is the extent of the scholarship on how department heads' actions and objectives possibly affected British railways' financial performance between 1870 and 1914. Yet, few studies have presented specific examples of where department heads acted in ways that damaged their companies' efficiency and internal cohesion. The importance of this thesis is, therefore, that it presents such examples in the LSWR's case between 1870 and 1911.

1.9. Knowledge and decision-making within the British railway industry 1870 to 1914

It should also be considered that between 1870 and 1914 railway companies' performance was not solely related to who was making decisions or the organisational frameworks within which decision-makers worked. The quality of the information they possessed about the potential trade, possible revenues and costs of enacting policies or making investments was an important issue as this helped guide the decisions they made. Nevertheless, like other areas of the literature mentioned above, Channon argued the subject has been touched on little.[57] Despite scholars talking at length about the defective decisions and strategies employed by industry leaders (see Section 1.12), few have discussed the knowledge and information that underpinned them.

The little discussion there has been focused on the nineteenth-century railway companies' lack of project appraisal and long-term planning. Gourvish argued that in the period 'project appraisal was inadequately developed within most [railway] companies'; while Pollins contended there was a 'general lack of statistical information on which decisions were made' and 'one looks in vain for examples of forward planning or for the use of accounts as aids to management decisions.'[58]

Channon's work on the Midland Railway's extension to London, opened in 1869, is the only study that has provided detailed analysis of the information a railway company's decision-makers used when formulating a major investment decision. He argued that those who drove forward the

[56] Channon, *Railways in Britain and the United States, 1830-1940*, p.42 and p284-285; Bonavia, *The Organisation of British Railways,* p.17-18
[57] Channon, *Railways in Britain and the United States*, p.81
[58] Pollins, *Britain's Railways: an Industrial History*, p.68; Gourvish, *Railways and the British Economy*, p.44

decision, the General Manager and a small group of directors, could not be considered traditional 'profit maximisers' as their 'knowledge of costs, revenues and alternatives was either too rudimentary or too incomplete to form the basis of accurate profit forecasts.' Construction costs, especially in London, were also particularly hard to predict. Nonetheless, Channon argued that detailed project appraisal was not undertaken because 'the disciplining role of the market was limited' and the 'availability of investment funds and shareholder passivity freed the decision-makers from making rigorous predictions of profitability.'[59] This case therefore supports Crafts, Leunig, Mulatu and Mills' arguments that before 1900 railway decision-makers possessed considerable freedom of action because the extent to which they were constrained by the market, legislation or shareholders was limited.[60]

Consequently, scholars generally accept that before 1914 British railways' decision-makers only possessed rudimentary information regarding the cost of and potential revenues that could be generated from their ventures. This thesis therefore adds to this literature by establishing what information the LSWR's decision-makers possessed when making decisions between 1870 and 1911, and how this influenced the quality of the company's investment policies and management.

1.10. Conclusion

This section has repeatedly demonstrated that the existing scholarship on British railway management between 1870 and 1914 is very limited. Consequently, it is not completely understood how companies were managed, which factors influenced the decisions industry leaders took, and how these things directly affected railways' profitability. Therefore, by examining how the LSWR's policies, strategies and management practices shaped its financial performance between 1870 and 1911, this thesis is a valuable addition to the existing literature. Most importantly, the thesis will feed into wider debates surrounding the causes of the British railway industry's declining performance in this period. Indeed, interest in this subject has been recently renewed, re-igniting debates that occurred intermittently between the 1960s and 1980s. These debates will now be discussed.

[59] Channon, *Railways in Britain and the United States, 1830-1940*, p.107
[60] Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632

Section 2 – British railway industry performance - 1870-1914

1.11. British railway industry profitability, 1870-1914

Year	Percentage return on paid-up capital (ROCE)	Percentage return on paid-up capital (5-year moving average)	Percentage return on capital expended (ROCS)	Percentage return on capital expended (5-year moving average)
1870	4.90	-	5.43	-
1875	4.99	4.95	5.50	5.49
1880	4.93	4.84	5.49	5.39
1885	4.64	4.73	5.09	5.19
1890	4.84	4.80	5.22	5.16
1895	4.57	4.32	4.87	4.59
1900	4.41	4.46	4.58	4.65
1905	4.41	4.41	4.56	4.57
1910	4.56	4.46	4.73	4.62

Table 1: The return on capital employed of Britain's fifteen largest railways 1870-1910. Source: Brian Mitchell, David Chambers, and Nick Crafts, 'How good was the profitability of British railways 1870-1912?', *Economic History Review*, 64 (2011), p.806

The British railway industry's declining profitability after 1870 is undisputed, as many scholars including as Dodgson, Arnold and McCartney and Gourvish have argued.[61] Mitchell, Chambers and Crafts recently calculated the return on paid up capital (ROCE) and return on actual capital spent (ROCS) of the industry's fifteen largest companies between 1870 and 1910. As Table 1 shows these both declined between 1870 and 1900, after which there was a slight increase. It is these changes that have interested scholars.[62]

1.12. Possible internal influences that diminished industry profitability, 1870-1900

There is no consensus on what diminished British railways' profitability before 1900. Nevertheless, the majority of scholars have blamed companies' defective management – although, which aspect of their management they place the greatest blame on has been disputed. Consequently, by establishing which policies and management practices most impacted on the LSWR's financial performance between 1870 and 1911, the thesis contributes towards resolving these debates.

[61] Gourvish, *Railways and the British Economy: 1830-1914*, p.41; John Dodgson, 'New, disaggregated, British railway total factor productivity growth estimates, 1875 to 1912', *The Economic History Review*, 64 (2011) p.637; Arnold, and McCartney, 'Rates of return', p.54

[62] Mitchell, Chambers and Crafts, 'How good was the profitability of British railways 1870-1912?' The Economic History Review, 64 (2011), p.807

Some scholars, such as Aldcroft and Dodgson, argued that railways' damaged their profitability and performance after 1870 through the construction of weakly performing lines. This built in excess capacity into the British railway network, as Casson demonstrated. He constructed a counterfactual railway network that served every location the real one did in 1914, but which possessed 7,000 fewer route miles and cost twenty-five percent less capital.[63] Two reasons this excess network capacity was built have been suggested. Cain and Dodgson argued that companies constructed lines for competitive reasons or for territorial defence.[64] Indeed, Casson argued that many routes constructed to keep competitors out of territories deliberately linked towns directly to keep construction costs down, meaning they bypassed communities where profitable trade potentially could have been developed.[65] Alternatively, Irving and Hodgkins argued that companies built unremunerative or poorly performing lines for non-competitive reasons, such as filling gaps in their network or serving specific customers. [66]

How excess network capacity and poorly performing lines actually diminished British railways' ROCEs and profitability is unclear, although some scholars have argued the affect was minimal. Drawing on a very small number of cases, Gourvish argued the capital the railways of Sir Edward Watkin and James Staats Forbes' spent on lines that generated poor returns between 1870 and 1899 was modest, suggesting they only lowered the companies' ROCEs by small amounts. Hodgkins also contended that the effect of line building competition on the profitability of the South Eastern (SER) and London, Chatham and Dover Railways (LCDR) was 'overdone.'[67] Arnold and McCartney disputed completely the idea that industry decision-makers purposefully constructed poorly performing lines. They argued that given the British railway network was mostly completed by 1872 companies' rates of return were not large enough to allow the construction of inevitably unremunerative lines. In cases where they were built this was unplanned.[68]

Another proposed explanation for the British railway industry's declining profitability after 1870 was that decision-makers abandoned profit maximisation and shareholder's interests, while favouring other objectives. Arnold and McCartney, Channon, Gourvish and Irving have all argued

[63] Mark Casson, *The World's First Railway System: Enterprise, Competition, and Regulation on the Railway Network in Victorian Britain*, (Oxford, 2009) p.104
[64] Dodgson, 'New, disaggregated, British railway total factor productivity growth estimates, 1875 to 1912', p.639; Derek H. Aldcroft, British Railways in Transition, (London, 1968), p.9-14
[65] Casson, *The world's first railway system*, p.307-308
[66] Irving, *The North Eastern Railway Company*, p.180; Hodgkins, *The Second Railway King*, p.48
[67] T.R. Gourvish, 'The Performance of British Railway Management after 1860: The Railways of Watkin and Forbes', *Business History,* 20 (1978), p.192-193; Hodgkins, *The Second Railway King*, p.639
[68] Arnold, and McCartney, 'Rates of return', p.56

that to some extent railways tailored policies to the communities and businesses they served, reducing their profitability. This was in an effort to preserve their commercial freedom by placating traders and parliament's demands over rates and safety, especially as the latter increasingly legislated on these things after 1870 (see below).[69]

Other scholars have argued that after 1870 railways' decision-makers pursued personal goals at the expense of profit maximisation. Cain contended that while decision-makers kept profits and dividends high enough not to rouse investor ire (profit satisficing), they adopted strategies and policies they personally desired, for example maintaining unnecessarily high technical standards, furthering company growth or building lines that served their other business interests. Crafts, Mills and Mulatu similarly argued that improvements in railways' operational practices after 1900 showed that before then decision-makers had 'ample opportunity' to neglect cost reductions and productivity improvements while pursuing their own goals.[70]

Some academics have attributed decreased industry profitability before 1900 to service competition. While Channon, Irving and Hodgkins argued that competitive rate cutting had mostly ended by 1870,[71] most scholars agree that railways increasingly engaged in service competition in the 1880s in attempts to attract custom. For example, Divall and Shin argued that companies increased train speeds as they desired commercial advantage over rivals, while Irving argued that service competition after 1870 became intense, with trains increasing in speed, goods facilities being augmented and more luxurious passenger stock being built.[72] Consequently, Aldcroft and Cain argued that competition was seriously damaging companies' profitability in the period after 1870.[73] Nevertheless, recent studies have downplayed competition's role in reducing the British railways' profitability between 1870 and 1900. Mitchell, Chambers, Mulatu, Crafts, Leunig and Mills argued that a lack of competition caused management failure in this period, as market forces – amongst other pressures acting on decision-makers - were not strong enough to

[69] Arnold and McCartney, 'Rates of return,' p.54-57; Channon, *Railways in Britain and the United States, 1830-1940*, p.126; Gourvish, 'The Performance of British Railway Management after 1860', p.198; Irving, 'The Profitability and Performance of British Railways 1870-1914', p.54-55,

[70] Crafts, Mills, and Mutlau, 'Total factor productivity growth on Britain's railways, 1852–1912', p.632

[71] Channon, Railways in Britain and the United States, 1830-1940, p.111; Irving, 'The Profitability and Performance of British Railways 1870-1914', p.53; Hodgkins, *The Second Railway King: The Life and Times of Sir Edward Watkin: 1819-1901*, p.560

[72] Colin Divall and Hiroki Shin, 'Cultures of Speed and Conservative Modernity: Representations of Speed in British Railway Marketing', in Benjamin Fraser and Steven D. Spalding (eds.) *Trains, Culture, and Mobility: Riding the* Rails, (Plymouth, 2011), pp.10

[73] Irving, 'The Profitability and Performance of British Railways 1870-1914', p.53; Aldcroft, *British Railways in Transition*, p.14-18; Cain, 'Railways 1870-1914: The maturity of the private system', pp.115-117

compel companies into eliminating operational waste and inefficiency.[74] Indeed, this thesis presents evidence that supports this conclusion in the LSWR's case.

Numerous scholars have also attributed the railway industry's diminished profitability between 1870 and 1900 to factors beyond decision-makers' control. Although, given the limited study of this subject and the small number of business histories on individual railway companies operating in the period, there is no consensus as to which external pressures most affected their financial performance. Ashworth contended, without presenting any substantive evidence, that in the 1870s significant increases in high-volume low-margin traffic depressed railways' profits as they generated less revenue per passenger and per ton of goods hauled.[75] Surprisingly, since Ashworth made this argument in 1960 no known scholars have reconsidered his argument in detail; however, this thesis shows that the LSWR's profit margins were, indeed, pressured by a growth in high-volume low-margin traffic third class passenger traffic after 1870.

Scholars have also argued that increasing fuel, material and wage costs depressed companies' profitability. Irving and Pollins contended that wage increases in the early 1870s grew companies' operating ratios (OR - companies' operating expenses expressed as a percentage of their gross receipts) and reduced their ROCEs.[76] These increases were to an extent off-set in the 1880s and early-1890s by falling material costs; yet rising material, wage and fuel costs in the late 1890s increased the industry's expenditure to its highest ever level by 1900. Nonetheless, Gourvish and Cain argued it was too easy suggest changing price trends caused the industry's declining profitability after 1870, preferring to blame poor operational and managerial practices.[77]

Some scholars have also claimed that from the late-1880s augmented government legislation on rates and safety harmed railway companies' profitability. Most significantly, the government legislated on the rates companies' could charge for the conveyance of goods. In the 1880s traders increasingly complained that railways gave preferential rates to imported foreign bulk goods (usually foodstuffs). Consequently, in 1888 the Railway and Canal Traffic Act renamed the Railway Commissioners (set up in 1873 to hear trader's complaints over rates and goods

[74] Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig, and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632

[75] W. Ashworth, *An Economic History of Britain, 1870-1939*, (London, 1960), p.119-126

[76] Irving, 'The Profitability and Performance of British Railways,' p.49 Pollins, Harold, *Britain's Railways an Industrial History*, (Newton Abbot, 1971), p.93

[77] Cain, 'Railways 1870-1914: The maturity of the private system', pp.115-117; Gourvish, *Railways and the British Economy*, p.46

facilities) to the Railway and Canal Commission and gave it powers to investigate railway companies' goods classification systems and schedule of maximum charges. Its investigation resulted in the 1894 Railway and Canal Traffic Act which fixed the maximum rates railways could charge for goods haulage at 1892 levels.[78] Cain argued the Act was a 'millstone around [railway] companies' necks' as they could not raise rates to offset increased working costs in the late-1890s.[79] Kirby argued the Act 'confronted the railway companies with vital questions of future strategy, especially in a general context of increasingly expensive non-price competition and when operating costs were on a rising trajectory.'[80]

In the 1880s the government also introduced safety legislation in response to public pressure, which it could be argued drove up railways' expenditure. Government action on safety was limited before 1889. The Board of Trade simply monitored companies' usage of safety technology. Yet, in 1889 after the Armagh accident, in which eighty people died because of the absence of continuous braking on carriages (where each carriage wheel was braked when the locomotive brake was applied), the government rushed through parliament legislation to make this, interlocking points (where the actions of points and signals were interlocked to prevent conflicts), and block working mandatory on British railways.[81] The companies were consequently encumbered with the cost of installing and maintaining these safety devices. Furthermore, in 1893 the Regulation of Railways Act also attempted to limit the hours railway employees worked in an effort to prevent safety being compromised through their fatigue. Consequently, as the act reduced the length of many employees' working day, this theoretically raised industry costs given companies had to employ more staff to maintain operational effectiveness. Yet, as Gourvish stated, the effect of the act diminished considerably after 1900 as business picked up.[82]

Overall, academics such as Cain and Gourvish did not support the idea government legislation significantly reduced railway industry profitability from the 1890s onwards. [83] Recently Mitchell, Chambers, Crafts, Leunig, Mulatu and Mills have supported this argument, contending that before 1900 railways' decision-makers were subject to weak governmental and regulatory pressures – in addition to few constraints on their actions from shareholders and the market –

[78] Gourvish, *Railways and the British Economy*, p.46
[79] P.J. Cain, 'Traders versus railways: the genesis of the Railway and Canal Traffic Act of 1894,' *The Journal of Transport History*, New Series II (September 1973), p.80
[80] M.W. Kirby, 'Railway development and the role of the state: reflections on the Victorian and Edwardian Experience', in R.W. Ambler, (ed.), *The History and Practice of Britain's Railways*, (Aldershot, 1999), pp.32
[81] Gourvish, *Railways and the British Economy*, p.53
[82] Gourvish, *Railways and the British Economy*, p.46
[83] Gourvish, *Railways and the British Economy*, p.46; Cain, 'Railways 1870-1914: The maturity of the private system', p.112

and, consequently, they were not under pressure from this source to regularly reassess or reform existing management practices, leading to cost inefficiencies developing within the industry.[84] Nevertheless, few studies have examined how government legislation actually affected companies' profitability, meaning that this thesis, which attempts to achieve this in the LSWR's case, is an important addition to the literature.

Conclusion

This survey of literature has revealed scholars have attributed the British railway industry's declining profitability between 1870 and 1900 to numerous factors. But apart from Irving's work, no study has comprehensively assessed which factors most affected industry performance or ruled out those that did not. This thesis' importance is that it adds clarity to existing debates by demonstrating how it was the policies and strategies the LSWR's senior managers and directors enacted that had the greatest bearing on the company's financial performance before 1900. It does, nonetheless, demonstrate that some external factors, particularly the growth in high-volume low-margin traffic after 1870, did lower the LSWR's profitability; while also ruling out the idea that after 1889 government legislation significantly impacted on company costs.

1.13. Improvements in the management of the British railway industry, 1900-1914

From the late-1890s onwards numerous factors negatively impacted on the British railway industry's financial performance. These included an inability to raise capital,[85] augmented government legislation, rising fuel and material prices, slowing traffic growth and increased union activity. Scholars generally agree that in the face of these new challenges railways innovated and found efficiencies as they were forced to reassess, adapt and reform their operating practices.

Principally, scholars including Crafts, Leunig, Mulatu, Irving, Gourvish and Pollins have argued that after 1900 railways attempted to reduce expenditure through improving train operations' efficiency. Pollins, for example, mentioned that companies built larger locomotives and higher capacity wagons, while others introduced electrical and pneumatic methods of signalling. Irving

[84] Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig, and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?' p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632

[85] Irving, 'British Railway Investment and Innovation, 1900-1914

argued the NER's goods services became substantially more efficient after 1900, with improved management statistics and larger wagons being introduced.[86]

Additionally, Irving and Cain argued that railways attempted to reduce expenditure through comprehensive working agreements, where resources were pooled, facilities were shared and, most importantly, service competition was eliminated. For example, the LNWR, Lancashire and Yorkshire (L&YR) and Midland Railways affected savings through such arrangements. Indeed, Cain argued that by 1910 the country was effectively divided into six railway groups. Channon also contended that railways explored creating pooling agreements, despite governments looking unfavourably on their efforts to temper competition through such means.[87]

Nevertheless, after 1900 decision-makers were not always successful in improving railway companies' performance, and Crafts, Mills, Mutual,' Leunig and Dodgson all argued the industry's Total Factor Productivity (TFP) growth fell in the period. The reason for this has not been clarified in the literature, but one explanation can be suggested. Irving contended that after 1900 railways' freedom of action was constrained by limited capital supplies, with large quantities going to fund overseas railways and other businesses in Britain's growing corporate economy. Consequently, this factor caused the NER and LNWR to delay the adoption of electric traction on some lines, and therefore this suggests that capital supply shortages to some extent contributed to railways' TFP growth falling in the period.[88]

Irving did not absolve decision-makers of all responsibility for the NER and LNWR's delay in adopting electric traction; he believed they failed to fully acknowledge its benefits. The LNWR's General Manager was reluctant to raise interest rates to increase capital returns that would pay for it, and the NER lacked strategic momentum after George Gibb's departure as general manager in 1906. To some extent, he argued, managerial failure continued within the LNWR and NER after 1900, despite senior company officials being pressured by the changed trading environment to improve their management quality and innovate.[89]

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[86] Crafts, Leunig and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', p.355; Gourvish, *Railways and the British Economy*, p.45-46; Irving, 'The Profitability and Performance of British Railways 1870-1914', p.60-62

[87] P.J. Cain, 'Railway Combination and Government, 1900-1914', *The Economic History Review*, 4 (1972), p.633; Channon, *Railways in Britain and the United States*, 1830-1940, p.125-126

[88] Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.625;Crafts, Leunig and Mulatu, 'Corrigendum', p.352; Dodgson, 'New, disaggregated, British railway total factor productivity growth estimates', p.637; Irving, 'British Railway Investment and Innovation, p.63

[89] Irving, 'British Railway Investment and Innovation, p.63

I have shown that the scholarship pertaining to the management of the British railway industry between 1900 and 1914 is very limited. It has not been decisively established how the operating reforms senior industry leaders implemented directly influenced companies' performance. Consequently, by analysing in detail the LSWR's management and policies after 1900, this thesis suggests better than previous studies how companies possibly responded to the changed trading environment they faced.

Section 3 – Case study selection

This thesis' analysis of the LSWR's management quality and financial performance between 1870 and 1911 is a valuable addition to the existing literature for three reasons. Firstly, the existing scholarship on British railways' management between 1870 and 1914 has largely focussed on how railways north of London were managed, while neglecting companies operating in the southern part of the country where the trading environment was different. Secondly, academics have largely examined the management of companies that were exceptional in some way. Yet, because the LSWR was never considered an excellent or poor performer financially within the British railway industry between 1870 and 1911, studying it provides information on the policies and strategies adopted by a company that was not an industry leader, nor an industry failure. Lastly, the company's financial performance was very varied between 1870 and 1911, and, thus, analysing what caused these results provides suggestions as to what constituted 'good' and 'bad' railway management in the period.

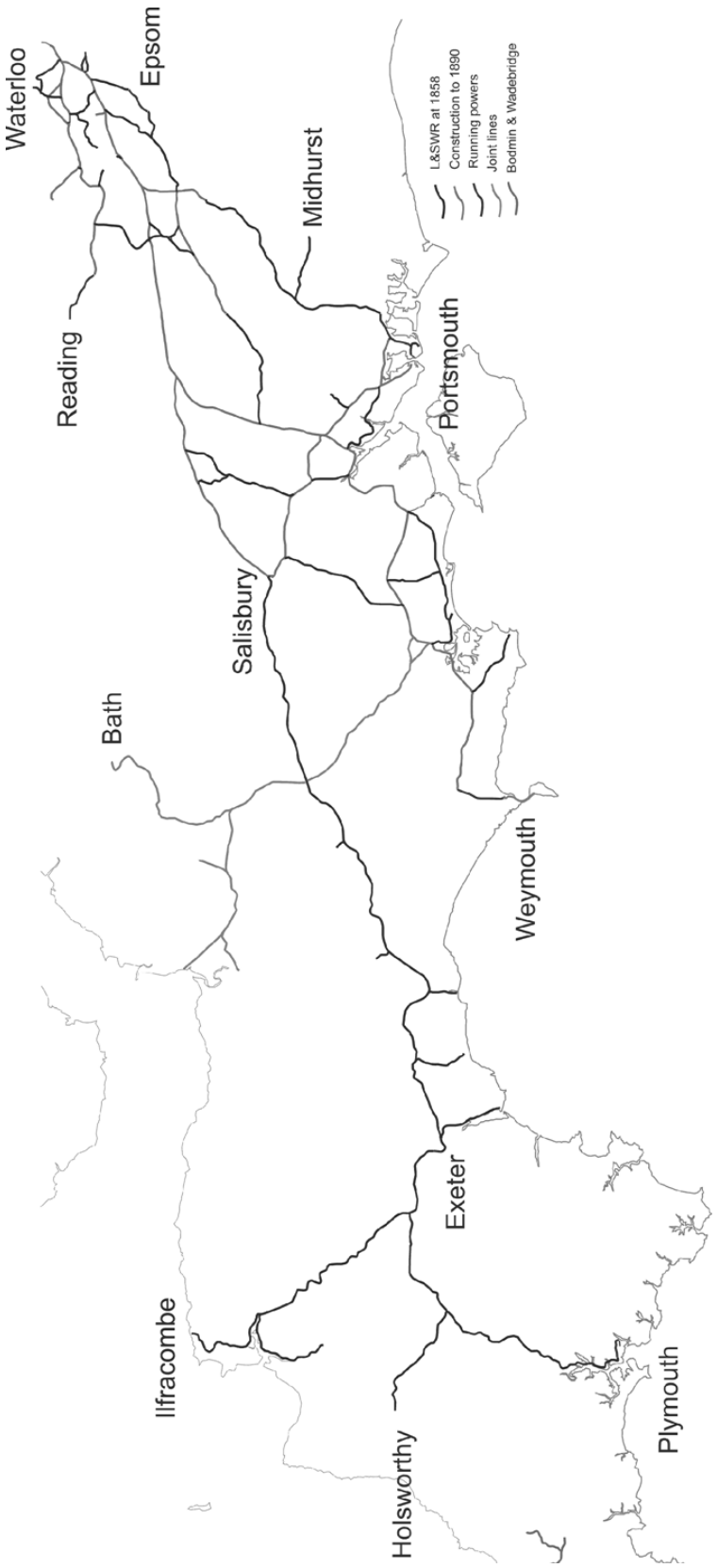


Figure 2. LSWR network in 1890, Source: 'Afterbrunel', File: Lswr map 1890.gif, *Wikipedia*, http://en.wikipedia.org/wiki/File:Lswr_map_1890.gif, 8 September 2007

1.14. The literature's neglect of southern British railways

To begin to fully explain why studying the LSWR's management between 1870 and 1911 is significant to the historiography, it is important to briefly describe the company's history and the nature of its business. After 1870 the British railway industry was dominated by fifteen major companies (fourteen after 1899) that in that year generated 88.7 percent of the industry's output. By 1910 this figure had only marginally increased to 89.6 percent.[90] These companies, which in 1885 controlled 81.14 percent of the nation's route mileage,[91] had oligopolistic control over the territories they served.

The LSWR, nicknamed the 'Royal Road' presumably because it conveyed royalty frequently (the reason is unknown), was one of Britain's fifteen largest companies between 1870 and 1911, and by market value it was the ninth largest in 1904/5.[92] It was also throughout its history (1838-1922) the largest railway in terms of geographical size and market value serving Britain's southern regions. Like many British railways, by 1870 the company had already built, leased or was working all of the lines that made up the core of its network until 1914. Its London terminus was Waterloo Station; it served a dense inner commuter zone and was connected to the south coast at Southampton, Portsmouth and Bournemouth. Indeed, it was, to a small degree, in competition with coastal shipping for traffic between London and the south coast, especially after the 1890s.[93] Furthermore, it also operated lines to the West Country which served Exeter and Dorchester, and it frequently competed with the GWR for passenger traffic to these places. After 1870 the company both grew and consolidated its network. By the 1890s it had purchased most of the lines it leased or worked. It also had leased (with the Midland) the Somerset and Dorset Railway (SDR) in 1876 and opened the 'new' Guildford line in 1885. The company extended its lines westward in the 1890s, connecting to Plymouth in 1890, Bude in 1898 and the furthest point west it reached was Padstow in 1899. Furthermore, it consolidated its territory by opening the Basingstoke and Alton Light Railway in 1901 and the Meon Valley line in 1903. Lastly, in 1892 the LSWR acquired the Southampton Dock Company (SDC), the largest single capital

[90] Arnold and McCartney, 'Rates of Return', p.50
[91] Board of Trade, *Railway Returns for 1885*
[92] Channon, *Railways in Britain and the United States, 1830-1940*, p.23
[93] P.S. Bagwell and J. Armstrong, 'Coastal Shipping', in *in* Michael J. Freeman, and Derek H. Aldcroft, *Transport in Victorian Britain,* pp.112; Channon, *Railways in Britain and the United States, 1830-1940*, (Manchester, 1988), p.179

expense in its history. It subsequently developed this into one of Britain's major trading ports.[94] Therefore, while the LSWR's network developed between 1870 and 1911, it never extended its lines or operations beyond the south of the country, or served many heavily industrialised regions.

Railway Company		*1872*		*1885*		*1898*	
		Passenger	***Goods***	***Passenger***	***Goods***	***Passenger***	***Goods***
Southern	London & South Western	5,177,012	1,899,329	8,239,965	3,129,279	12,424,574	4,633,649
		73.2%	26.8%	72.5%	27.5%	72.8%	27.2%
	London, Brighton & South Coast	4,294,533	839,035	6,725,104	1,411,797	8,523,726	1,933,225
		83.7%	16.3%	82.7%	17.4%	81.5%	18.5%
	South Eastern	3,468,930	791,595	5,248,610	1,442,026	6,951,803	2,193,013
		81.4%	18.6%	78.5%	21.6%	76.0%	24.0%
	Total	**12,940,475**	**3,529,959**	**20,213,679**	**5,983,102**	**27,900,103**	**8,759,887**
		78.6%	**21.4%**	**77.2%**	**22.8%**	**76.1%**	**23.9%**
Northern	Lancashire & Yorkshire	5,607,118	5,120,357	8,348,265	5,598,017	11,874,754	6,648,999
		52.3%	47.7%	59.9%	40.1%	64.1%	35.9%
	London & North Western	13,760,992	15,074,924	19,823,887	18,395,935	25,483,452	22,065,200
		47.7%	52.3%	51.9%	48.1%	53.6%	46.4%
	Midland Railway	7,090,532	12,071,918	13,867,257	19,706,141	18,358,699	27,711,617
		37.0%	63.0%	41.3%	58.7%	39.9%	60.2%
	North British	3,627,940	4,602,480	5,344,192	6,338,390	8,801,802	8,446,014
		44.1%	55.9%	45.7%	54.3%	51.0%	49.0%
	North Eastern	6,572,831	12,203,287	9,896,548	13,264,698	14,093,698	16,800,086
		35.0%	65.0%	42.7%	57.3%	45.6%	54.4%
	Total	**36,659,413**	**49,072,966**	**57,280,149**	**63,303,181**	**78,612,405**	**81,671,916**
		42.8%	**57.2%**	**47.5%**	**52.5%**	**49.1%**	**51.0%**

Table 2: Proportion of train miles run by passenger and goods trains on eight principal British railway companies in 1872, 1885 and 1897. Source: *Board of Trade railway returns*.

[94] R.A. Williams, *The London and South Western Railway - Volume 1: The Formative Years*, (Newton Abbott, 1968), Irving, 'The Profitability and Performance of British Railways 1870-1914', various pages; Louis Henry Ruegg, The History of a Railway, (Sherbourne, 1878), p.49; The National Archives [TNA], RAIL 1110/281, London & South Western Railway (formerly London & Southampton Railway), reports and accounts, 1831-1879

Consequently, the nature of the LSWR's trade was decidedly different to that of railways serving industrialised, mainly northern areas of Britain, and Table 2 shows that like other southern companies a greater proportion of its train mileage was run conveying passengers compared to goods. Because of this, the majority of the LSWR's capital expenditure after 1870 went on adapting its infrastructure to accommodate growing passenger numbers, which rose from 13.3 million in 1870 to 63.7 million in 1901 (362.62 percent). For example, Waterloo Station was enlarged in 1878 and 1885, and a complete rebuilding of it was begun in 1900 (this was completed in 1922). Capacity issues on its main lines near London also led to widening projects being initiated in 1878 and 1897.[95] The LSWR's dependence on passenger traffic for its financial success is revealed by the fact that the most significant threat to its profitability after 1870 was when suburban passengers deserted the railway for new tram systems after 1901. Indeed, by February 1913 the railway was losing £100,000 and one million passengers to them yearly.[96]

When compared to northern railways a greater proportion of the LSWR's business was passenger conveyance, and it is reasonable to suggest that between 1870 and 1911 the company may have been managed differently to them also. Yet, this currently cannot be ascertained as scholars have largely neglected analysing the management and financial performance of southern British railways during this period. For example, Irving wrote an economic history of the NER and also studied the electrification prospects of it and the LNWR (both companies serving the north); Gourvish studied Mark Huish's general managership of the LNWR; Channon's work has focussed on the GWR (serving the West of England and Wales) and the Midland Railway; Barker studied Lord Salisbury's reforms of the GER's management (serving East Anglia); while Dodgson's econometric work focussed on five northern railways: the GCR, L&YR, LNWR, NER and Midland. Only Gourvish's analysis of the railways of Watkin and Forbes has discussed the management of southern companies, these being the SER and LCDR. [97]

Overall, because scholars have largely focussed their attention on the management of railways serving northern and industrial regions of the country, the management of southern companies operating within a distinct business and trading environment, and whose decision-makers

[95] R.A. Williams, *The London and South Western Railway - Volume 2: Growth and Consolidation*, (Newton Abbott, 1973); J.N. Faulkner and R.A. Williams, *The LSWR in the Twentieth Century,* (Newton Abbott, 1988)
[96] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.101
[97] Irving, *The North Eastern Railway Company*; Irving, 'British Railway Investment and Innovation'; Gourvish, *Mark Huish and the London & North Western Railway*; Channon, *Railways in Britain and the United States, 1830-1940*; Barker, 'Lord Salisbury, Chairman of the Great Eastern Railway 1868-1872', 81-103; Dodgson, 'New, disaggregated, British railway total factor productivity growth estimates'; Gourvish, 'The performance of British railway management after 1860'

possibly responded to challenges in alternative ways, has been neglected in the literature. My study of the LSWR's management and financial performance between 1870 and 1911 is therefore a valuable addition to the literature for this reason.

1.15. The bad, the good and the average: the LSWR's position in the industry 1870-1914

The virtue of studying the LSWR's management quality between 1870 and 1911 is not simply the company's geographical location; its financial performance in the period also makes it an interesting subject of analysis.Prior to this study scholars have principally assessed nineteenth and early-twentieth century railway companies where a feature of their management marked them out as being of particular interest. Research has been undertaken on companies that excelled or innovated; for example, Irving studied the NER which was considered by many to be Britain's best managed company between 1891 and 1914. Other work has focussed companies within which dynamic or interesting personalities were working, such as Hodgkins' study of Sir Edward Watkin's life, Braine's biography of the LNWR's chairman Richard Moon, or Baker's study of Lord Salisbury's chairmanship of GER. Companies with cultural gravitas have also been looked at and Channon researched the GWR extensively. [98] Lastly, companies perceived to have performed poorly have also been of interest, for example Gourvish analysed the railways of Watkin and Forbes.[99]

However, up to the current time the LSWR has been overlooked by academics. This may initially suggest the company was managerially and financially unremarkable between 1870 and 1914. Indeed, Klapper expressed this sentiment by stating that in 1912 it was 'endowed with some qualities of Victorian greatness streaked with some excessively drab patches.'[100] Yet, the LSWR is a worthy subject of study because compared to other British railways its financial performance was highly variable between 1870 and 1911. The best available measures of the LSWR's financial performance between 1870 and 1911 are its return on capital employed (ROCE), return on capital spent (ROCS) and operating ratio (OR). Initially, it is important to note how these figures were calculated. Mitchell, Chambers and Crafts calculated more accurately than previous studies the ROCEs of Britain's fifteen largest railways and produced two sets of figures for this using different definitions of 'capital employed' (five year moving averages). Their first set of figures in

[98] Irving, *The North Eastern Railway Company*; Gourvish, *Mark Huish and the London & North Western Railway*; Hodgkins, *The Second Railway King*; Braine, *The Railway Moon*; Barker, 'Lord Salisbury, Chairman of the Great Eastern Railway 1868-1872', 81-103; Channon, *Railways in Britain and the United States, 1830-1940*;

[99] Gourvish, 'The performance of British railway management after 1860'

[100] C.F. Klapper, *Sir Herbert Walker's Southern Railway*, (Shepperton, 1973), p.36

Table A, Appendix 1.1, shows the railways' ROCEs excluding all debt and interest charges, which most companies charged to revenue, and nominal additions to capital, which inflated the actual capital at their disposal. Added to this was the balance of payments and discounts on stock issues and the capital of, and subscriptions to, smaller companies they operated, as these enhanced their revenue earning capacity. Table B (Appendix 1.1) shows the companies' return on capital expended (which I have designated for the rest of the thesis ROCS, the 'S' representing 'spent').[101] Finally, I have extracted from the Board of Trade's *Railway Returns*[102] figures for the railways' ORs (Table C Appendix 1.2), which are their operating expenditure expressed as a proportion of their revenue and, thus, show the amount of profit companies had at their disposal for dividends or re-investment. These measures will now be used to briefly survey the LSWR's financial performance between 1870 and 1911 compared to other British railway companies.

Throughout Scott's general managership (1870-1884) the LSWR was one of the poorest performing British railway companies. However, Table A shows that its ROCE scores were generally mid-ranked between 1870 and 1889. This did not indicate that the company was managed adequately in the period. Rather, while the return on the capital the company raised was adequate, the return on that which was spent was less good. Indeed, as Chapter 4 shows, the LSWR was managed very poorly after 1870 because of deficient internal coordination of the company's departments by senior decision-makers and the persistence of out-dated and inefficient management practices. Reflecting this, compared to other major British railways the LSWR's ROCS was poorly ranked before 1887, as Table B displays. It also had one of the industry's highest ORs, shown in Table C. Furthermore, Figure A (Appendix 1.2) illustrates that the LSWR's OR was eight percent higher than the fifteen largest companies' average by 1885.

During Charles Scotter's general managership (1885-1897) the LSWR's financial performance significantly improved. Tables A and B show that before 1890 its ROCE and ROCS followed the industry-wide trend of deterioration. Yet, thereafter they improved and by 1897 the company's ROCE was 0.16 percent higher than it had been in 1872, while its ROCS was only 0.01 percent lower.[103] Similarly, the LSWR's OR also improved after 1885 and Table C shows that in this respect it was a mid-ranking performer from the 1890s onwards. Indeed, Figure A illustrates that between 1885 and 1889 the company's OR aligned with the average of Britain's fifteen largest

[101] Mitchell, Chambers, and Crafts, 'How Good Was The Profitability Of British Railways,' p.804
[102] From the early-1840s British railway companies were legally obliged to send the Board of Trade statistical returns of their traffic – this is what was included in the *Railway Returns.* – Jack Simmons, 'Trade, Board of,' in Simmons and Biddle (eds.), *The Oxford Companion to British Railway History*, pp.532
[103] Mitchell, Chambers, and Crafts, 'How Good Was The Profitability Of British Railways', pp.809

companies, after which it followed it closely. As Chapter 5 demonstrates, the company's improved financial performance after 1885 was the result of Scotter's wide-ranging reforms of its administration and operations.

Throughout Charles Owens' tenure as general manager (1898-1911) the LSWR's financial performance was unremarkable. Despite Tables A and B showing its ROCE and ROCS continued to rank highly between 1897 and 1910, unlike ten other companies and the national average they marginally fell in this period. Also, Table C shows that between 1897 and 1907 the company's OR was ranked mid-table amongst the ORs of the industry's fifteen largest companies, with Figure A illustrating that it was slightly above the average until 1910. The LSWR's financial performance was unexceptional after 1900 because, as this Chapter 6 shows, the company did not initiate managerial reforms or innovate to the same extent other British railway companies did in the period.

As this thesis argues, between 1870 and 1911 the LSWR's financial performance fluctuated depending on how well it was managed. Thus, by contrasting the causes of the LSWR's varied financial performance in this period, this thesis makes valuable new suggestions as to what constituted 'good' and 'bad' management practice in the British railway industry after 1870. These suggestions can therefore be compared with management practice in other British railways at the time, helping to clarify what caused the industry's declining financial performance.

Section 4 – The nature and format of the study

1.16. The archival material

For numerous reasons archival material pertaining to the LSWR's management between 1870 and 1914 is limited, as is the case with most British railway companies operating in this period. The company's board and committee minute books are a major source of evidence for this thesis. However, those held at The National Archives and Hampshire Record Office possess gaps in their sequences. For example, the board minute books between 1861 and August 1876 are lost, as are all of the Way and Works Committee minute books. Secondly, minute books usually only note the final decisions directors and managers made, and rarely reference who had the greatest influence on the decisions, any deliberations surrounding their formulation, or the information that was used to make them. Furthermore, the archives contain little correspondence between company officials, memoranda relating to policy, or detailed reports on individual issues.

Consequently, to understand LSWR decision-makers' actions better, evidence has been gathered from numerous other sources including diaries, anecdotal evidence, newspaper reports, staff records, obituaries and magazines. Moreover, from 1881 LSWR clerks ran the British railway industry's first staff magazine, the *South Western Gazette (SWG)*, which has been invaluable to my research. As such, I have developed a good understanding of what influenced the LSWR's financial performance were between 1870 and 1911.

1.17. Thesis plan

This chapter has repeatedly demonstrated this thesis' importance to the debate on the causes of the British railway industry's declining profitability between 1870 and 1914. This last section details how the next five chapters collectively analyse the influences on the LSWR's financial performance between 1870 and 1911.

Chapter 2 details the nature and development of the LSWR's management structures between 1864 and 1911. Firstly, it argues the company's functional department structure was clearly adequate for its administrative requirements. However, it also demonstrates that the structure frequently undermined the company's business performance. Because it concentrated decision-making authority at the organisation's head, the company's management quality was largely dependent on the changeable skills, experiences and relationships between its directors and senior managers. Additionally, the structure also meant that many individuals stayed for decades in posts where they had little criticism of their actions and almost complete authority over those below them, and, thus, there was a natural tendency for their thinking on railway management to stagnate or become conservative in nature, meaning established practices were not frequently reassessed or, where necessary, reformed. This tendency was only mitigated by when new senior managers were appointed from external sources. Overall, by describing the features of the LSWR's management structure between 1870 and 1911, this chapter's findings underpin those later in the thesis.

Chapter 3 considers how LSWR senior traffic managers' and directors' backgrounds and careers influenced the quality of the company's management between 1870 and 1911. The chapter's first section argues that traffic managers had rigid and introvert career paths before reaching influential positions. Most had few employment experiences outside of the Traffic Department, or even the section of it in which they worked, the result being that their views on railway management were narrow, they were deferential to authority and had limited capacity to innovate. Thereafter, LSWR directors' activities inside and outside the company are discussed. It

is argued that between 1870 and 1880 most directors were active in the company's affairs because few had business interests outside it. Moreover, between 1898 and 1911 the majority of LSWR directors had too many business commitments to become heavily engaged with the company, while a small number were particularly active because they lacked these demands on their time.

Chapter 4 looks the LSWR's profitability and performance during Archibald Scott's general managership between 1870 and 1884. Firstly, the chapter demonstrates how the company's poor financial performance in this period was not principally caused by network extensions, the purchase of lines it was leasing or working, or government legislation. Rather, the company was managed inefficiently. Its departments were inadequately coordinated and overseen, firstly by the directorate until around 1881 and then by Scott thereafter, and it lacked an overarching strategic direction throughout the period. Most importantly, Scott, who became Traffic Manager in 1852, persisted with using outdated and highly inefficient operational methods in the Traffic Department because since that time he had never been challenged to reform them. Ultimately, this chapter argues that directors' and senior managers' managerial failings chiefly caused the LSWR's poor financial performance between 1870 and 1884. Although, will be noted that the company's profitability was also depressed by growing high-volume, low-margin third class passenger traffic and wage increases.

Chapter 5's subject is the LSWR's profitability and performance during Charles Scotter's general managership between 1885 and 1897. Scotter vastly improved the company's fortunes by positioning himself at the apex of its management structure and gaining authority over the department heads. From there he coordinated the departments' activities and got them working together towards his goals of economisation and expanding the business. Consequently, by 1892 the LSWR was one of Britain's best performing railway companies, and because the directors trusted Scotter as a result he soon gained control of the company's investment policies which, ultimately, led to it purchasing the Southampton Docks in 1892. Overall, while not all decisions Scotter made benefitted the LSWR's profitability, this chapter argues that the company's improved financial performance after 1885 was principally the result of his strong leadership.

Lastly, Chapter 6 examines what caused the LSWR's unremarkable financial performance between 1898 and 1911. After 1900, like all British railway companies, the LSWR's profitability was diminished because its trading circumstances changed; material, wage and fuel costs had increased, capital became harder to access, and traffic growth slowed, chiefly because its

suburban passenger services were competing with new electric trams. The company's decision-makers did innovate and find some economies in response. Nonetheless, because its highly active directors had been with the concern for decades (both as directors and managers) and most senior traffic managers had passed through the Traffic Department's rigid promotional structures, both groups of decision-makers held narrow and somewhat conservative views on railway management, policy and strategy. Consequently, potential operational efficiencies were not effected and, most importantly, the electrification of the company's suburban lines, which was considered the best means of winning passengers back from the trams, was unnecessarily delayed after 1905. Ultimately, the chapter shows that underpinning the LSWR's unremarkable financial performance between 1898 and 1911 was decision-makers' inability to completely reform their embedded thinking on railway management.

The conclusion summarises the thesis' main findings, shows how they move on debates over the British railway industry's declining profitability and performance between 1870 and 1914, and discusses where my work has highlighted avenues for future research.

Section 5 – Appendices

1.1 British Railways' Rates of Return on capital employed (5-year moving average centred on year shown %)

A) Adjusted Paid-Up Capital of All Lines Worked Basis

Railway Company	*1872*	*1877*	*1882*	*1887*	*1892*	*1897*	*1902*	*1907*	*1910*
Caledonian	4.73	4.78	4.29	4.38	4.14	4.48	4.07	3.93	3.89
Great Eastern	3.62	3.62	4.00	4.16	3.96	4.33	4.17	4.17	4.00
Great Northern	5.86	5.03	5.12	5.09	4.72	4.51	4.28	4.40	4.49
Great Western	5.00	4.47	4.67	4.67	4.64	4.59	4.52	4.61	4.73
Lancashire & Yorkshire	6.23	5.20	4.61	4.14	3.95	4.24	3.78	3.92	3.97
London & North Western	6.23	5.52	5.64	5.35	5.17	5.33	4.84	4.97	5.11
London & South Western	5.12	5.34	5.11	4.86	5.05	5.28	4.80	4.77	4.73
London, Brighton & South Coast	3.80	4.45	4.31	5.08	5.31	5.26	4.74	4.65	4.72
London, Chatham & Dover	1.75	2.11	2.40	2.34	2.43	2.73	2.70	2.67	2.84
Manchester, Sheffield & Lincolnshire*	5.01	5.12	5.11	4.83	4.41	3.54	3.09	3.53	3.67
Midland	5.85	5.31	5.34	5.17	5.02	4.99	4.56	4.48	4.69
North British	3.56	4.40	4.15	4.40	4.12	4.51	4.57	4.36	4.29
North Eastern	6.17	5.47	5.78	4.96	5.19	5.13	4.91	5.15	5.21
South Eastern	4.56	4.99	4.96	4.80	4.53	4.47	3.46	3.38	3.59
Taff Vale	7.61	7.30	9.05	8.01	5.93	5.78	5.92	6.57	6.24
Average	*5.11*	*4.83*	*4.89*	*4.74*	*4.35*	*4.67*	*4.34*	*4.39*	*4.46*
LSWR Rank	**7th**	**4th**	**6th**	**7th**	**5th**	**3rd**	**4th**	**4th**	**4th**

B) Cumulative Capital Expenditure of All Lines Worked Basis

Railway Company	*1872*	*1877*	*1882*	*1887*	*1892*	*1897*	*1902*	*1907*	*1910*
Caledonian	5.31	5.19	4.65	4.65	4.37	4.60	4.09	3.88	3.79
Great Eastern	3.90	3.88	4.08	4.03	3.88	4.29	4.14	4.16	3.97
Great Northern	5.46	4.77	4.82	4.75	4.49	4.32	4.11	4.19	4.25
Great Western	5.03	4.65	4.80	4.81	4.68	4.52	4.41	4.43	4.54
Lancashire & Yorkshire	6.31	5.24	4.68	4.17	3.99	4.24	3.75	3.87	3.90
London & North Western	6.15	5.56	5.65	5.29	5.06	5.18	4.68	4.76	4.87
London & South Western	4.97	5.17	4.90	4.61	4.77	4.96	4.54	4.44	4.42
London, Brighton & South Coast	4.41	5.02	4.81	4.86	5.05	5.08	4.44	4.35	4.36
London, Chatham & Dover	2.03	2.54	2.85	2.78	2.87	3.17	3.05	3.08	3.33
Manchester, Sheffield & Lincolnshire*	5.33	5.31	5.24	4.90	4.40	3.48	2.88	3.34	3.53
Midland	5.94	5.42	5.53	5.32	5.19	5.09	4.55	4.40	4.54
North British	3.58	4.18	4.19	4.38	3.99	4.20	4.24	4.03	3.97
North Eastern	6.19	5.38	5.66	4.80	4.75	4.79	4.45	4.59	4.61
South Eastern	4.53	4.91	4.80	4.63	4.34	4.30	3.32	3.26	3.46
Taff Vale	6.73	6.37	8.04	7.24	5.40	5.21	5.37	5.82	5.49
Average	*5.63*	*5.39*	*5.43*	*5.16*	*4.65*	*4.93*	*4.51*	*4.55*	*4.62*
LSWR Rank	**10th**	**8th**	**6th**	**11th**	**5th**	**5th**	**4th**	**4th**	**6th**

Source: Mitchell, Chambers and Crafts, 'How good was the profitability of British railways 1870-1912?', *The Economic History Review*, 64 (2011), p.807 *Great Central Railway from 1897

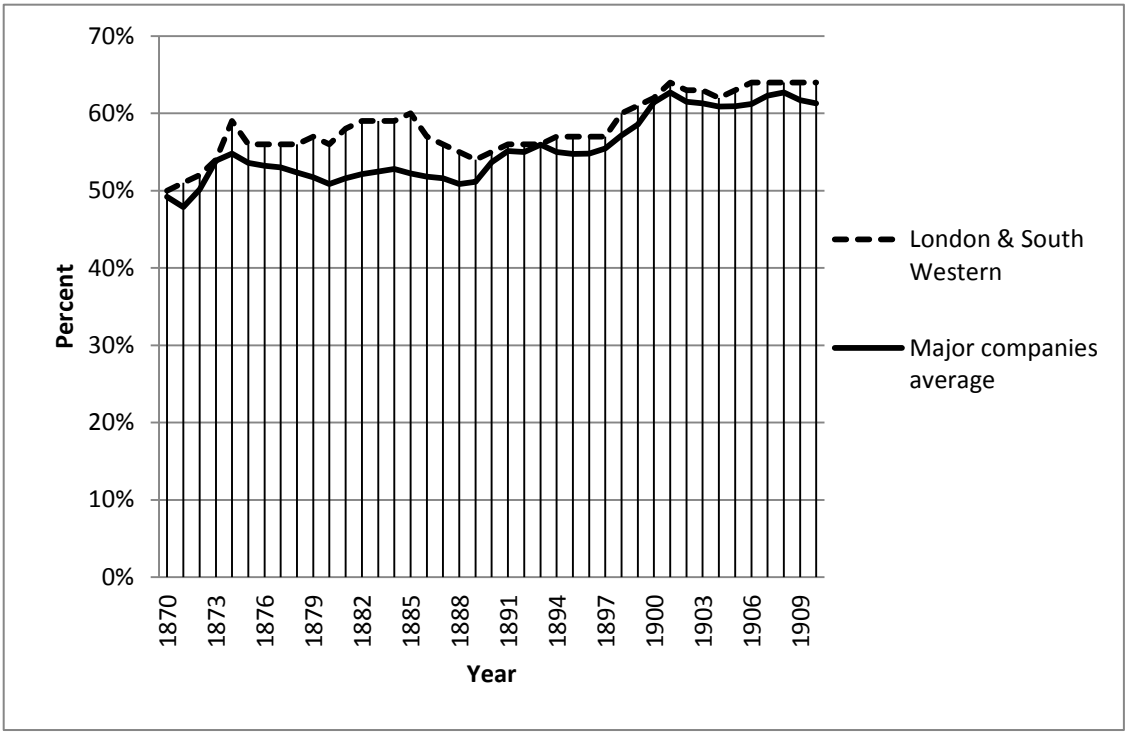
1.2 British Railways' Operating Ratio

Table C) Operating Ratio of Britain's fifteen largest companies (five year moving average)

Railway Company	*1872*	*1877*	*1882*	*1887*	*1892*	*1897*	*1902*	*1907*
Caledonian	50	50	52	49	52	51	56	56
Great Eastern	53	56	54	53	58	58	64	64
Great Northern	51	55	55	56	58	61	65	65
Great Western	48	52	50	49	54	57	62	63
Lancashire & Yorkshire	50	55	55	55	58	57	61	62
London & North Western	49	54	51	52	56	57	63	64
London & South Western	53	56	58	56	56	58	63	64
London, Brighton & South Coast	50	48	50	48	51	56	60	60
London, Chatham & Dover	57	55	53	52	55	54		
Manchester, Sheffield & Lincolnshire*	51	51	49	51	54	57	68	66
Midland	49	53	52	52	56	57	63	64
North British	56	54	51	48	52	50	53	55
North Eastern	49	53	51	53	57	59	64	64
South Eastern	47	47	48	47	53	54		
South Eastern & Chatham+							62	62
Taff Vale	54	53	51	51	59	55	58	57
LSWR Rank	**=11th**	**=14th**	**15th**	**=14th**	**=8th**	**=12th**	**=8th**	**=8th**

Source: Board of Trade, *Railway Returns* 1870-1912, *Great Central Railway from 1897. +Formed by a working agreement between the South Eastern and London, Chatham and Dover Railways in 1899.

Figure A) The LSWR and fifteen largest British railway companies' Operating Ratio 1870-1910



Source: Board of Trade, *Railway Returns* 1870-1912

Chapter 2 – The LSWR's Management Structures

This chapter analyses how the LSWR's management structures developed between 1870 and 1911, and how they affected the company's management quality and financial performance. It has three main arguments. Firstly, the LSWR's functional management structure was adequate for the company's administrative needs. Indeed, at no point was the company's overall corporate form or the major departments' internal structures – developed between 1864 and 1872 – put under enough administrative stress by the company's traffic or geographical growth for decision-makers to consider comprehensively reforming them. There was, broadly, structural stasis within the LSWR between 1870 and 1911.

However, Quail argued that businesses' performance could be undermined by functional management structures. This was frequently so in the LSWR's case. As with most companies possessing functional forms, as Quail, Wilson and Thomson argued, within the LSWR there was little delegation of decision-making authority to individuals below senior management level, and only the company's directors, General Managers and department heads influenced corporate strategy and policy.[104] Consequently, between 1870 and 1911 the company's management quality was determined by the often variable skills, experiences and relationships between these decision-makers. Indeed, particularly critical to the company's operational cohesiveness and management quality was the extent to which department heads' – who possessed considerable authority within their functionally isolated departments – were encouraged to work together and consider matters beyond their immediate remits by directors or, usually, the General Manager.

Moreover, it will be argued that because the LSWR's structure was excessively centralised, and senior officials could potentially occupy positions of authority for decades with a high degree of autonomy over their activities, there was a propensity for their thinking on railway management to stagnate over time, meaning established operational practices were infrequently reassessed and could become obsolete. Conservatism at the organisation's head was also bolstered by few traffic managers having worked outside the Traffic Department. Thus, because they had only learnt about railway management from within the LSWR, this limited their capacity effectively critique existing practices or think creatively (see Chapter 3). For these reasons, between 1870 and 1911 the LSWR's operating practices principally advanced or were improved when new senior managers joined the company who had worked outside it. Indeed, as later chapters show,

[104] Wilson and Thomson, The Making of Modern Management, p.12; Quail, John, 'The Proprietorial Theory of the Firm and its Consequences', in Wilson and Thomson *The Making of Modern Management*, p.13

there was little original innovation in, or development of management techniques within the LSWR in this period.

The chapter has three parts that demonstrate these arguments. Firstly, I analyse the format of the LSWR's board and sub-committee structures, which strengthened and sustained influence on decision-making being limited to the directors and senior managers. Thereafter, I discuss why the LSWR's structures prevailed without change between 1870 and 1911, followed by an analysis of the structures within the company's three main spending departments: Traffic; Locomotive, Carriage and Wagon; and Engineering. Lastly, and, most importantly, how the company's overall corporate form undermined its operational and financial performance is assessed.

Section 1 – The LSWR's board and its committees

2.1. The LSWR board and committee structures

Sections 2 and 3 of this chapter argue the LSWR's functional department structure frequently undermined its business effectiveness between 1870 and 1911. This was because, in large part, the company's board and committee structure strengthened and sustained the input on operational policies being limited to the self-reinforcing directorate, the General Manager and a small cadre of senior managers. It is therefore important to describe these structures.

The LSWR's board and committee format – which was established in the company's formative years – followed that which Bonavia argued most British railway companies possessed before 1900.[105] The LSWR's board, which met fortnightly, was the highest decision-making authority within the company and technically represented the shareholders. It possessed twelve members, which included a chairman and a deputy chairman.[106] Between 1870 and 1911 the LSWR board itself controlled the appointment of new directors. Before 1876 vacancies in the directorate were, theoretically, filled by shareholders electing replacements at half-yearly general meetings. Yet, in practice, when vacancies occurred the existing directors put forward applicants they had chosen to fill it and the proprietors' meeting always confirmed their choices. In 1876 the LSWR's Various Powers Act removed even the theoretical hold shareholders had over the board's makeup, and gave the directors power to appoint individuals to vacancies as they required.[107] Therefore, between 1870 and 1911 the LSWR board controlled its own character; determining

[105] Bonavia, *The Organisation of British Railways*, p.15-16
[106] TNA, RAIL 1110/281, 283 and 284, London and South Western Reports and Accounts, 1833-1922
[107] TNA, RAIL 1110/281, LSWR Report and Statement of Accounts, 31 December 1875, p.3

the skills, knowledge, links to external businesses, and political weight it possessed. As Chapter 3 discusses, the appointment of new directors in the period usually reflected the board's existing concerns and objectives. There was almost no scope for shareholders to bring their concerns to bear on the board's constitution after 1870.

Additionally, the LSWR directors formed numerous sub-committees that oversaw particular departments, thereby allowing the board to focus on major strategic managers. Made up of between three or five directors and attended by the relevant chief officers, these met on the day or morning before board meetings. Most business related to the day-to-day running of the company was decided at this level: the committees' minutes were then read and confirmed at the beginning of board meetings.[108] The number of sub-committees varied between 1870 and 1911. Three existed throughout; 'Traffic'[109] and 'Engineering'[110] (Way and Works before 1880), which oversaw the correspondingly named departments, and 'Accounts and Finance', which supervised the company's shares, banking and accounts.[111] In 1870 the Traffic Committee also handled the Locomotive, Carriage and Wagon Department's affairs; but the Engineering Committee acquired this responsibility in 1880. Then, in 1885, to improve oversight of these matters, Scotter obtained the establishment of an independent Locomotive Committee. This was formed from two members of the Engineering Committee and two members of the Traffic Committee (see Chapter 5).[112] In 1892 a Docks Committee was established to supervise the Southampton Docks, which the company purchased that year.[113] Other company functions, for example the Stores Department and steam packet services were overseen by different committees at different times.

It is important to note that between 1870 and 1911 the Traffic Committee was the LSWR's most important committee as it played a central role in determining the company's policies and strategic direction. Based on information received from subordinates, senior Traffic Department officials formulated what the company needed to facilitate traffic movement; for instance larger goods yards, augmented station accommodation or more rolling stock. Once the Traffic Committee and General Manager (or alternatively the head of the Traffic Department when the General Manager was absent) had decided upon what was required, the matter would then be

[108] TNA, RAIL 411/6 to RAIL 411/38, Court of Director minute books and director letter books, October 1876-1911; TNA, RAIL 1110/281, 283 and 284, London and South Western Reports and Accounts, 1833-1922
[109] TNA, RAIL 411/239 to RAIL 411/269, Traffic Committee Minute Books
[110] TNA, RAIL 411/43 to RAIL 411/62, Engineering Committee Minute Books
[111] TNA, RAIL 411/104 to RAIL 411/128, Accounts Committee Minute Books
[112] TNA, RAIL 411/182 to RAIL 411/198, Locomotive Committee Minute Books
[113] TNA, RAIL 411/140 to RAIL 411/155, Docks and Docks and Marine Committee Minute Books

passed to the Engineering or Locomotive Committees, depending on the request, who then ordered the departments they oversaw to undertake the necessary work. Furthermore, the Traffic Committee also supervised the company's train timetables, the majority of the company's staff, and fare structures, because these were managed by the Traffic Department's. Therefore, the Traffic Committee and traffic managers were both theoretically and practically central to determining the LSWR's operational strategies and policies and, to a large extent, its financial performance (see Chapter 3).

2.2. Sustaining centralisation

It was important to describe the dynamics of the company's board and committee structures as these undermined the LSWR's business effectiveness between 1870 and 1911. In this period most, if not all of the company's operational decisions had to receive the oversight of the directors. Ordinarily the decision-making process was as follows: a problem was identified below senior management level, this was passed up the hierarchy to the company's senior officials, who then formulated a response in consultation with the relevant committee or the board. For example, in November 1884 a junior Traffic Department official reported to Verrinder, the Traffic Superintendent, that the company had inadequate brake vans for the goods trains. After investigation he passed the matter to Scott, the General Manager, with the recommendation that twenty brake vans be built. Scott presented this suggestion to the Traffic Committee and the additions to rolling stock were agreed to. The matter was then passed to the Engineering Committee, which oversaw the Locomotive, Carriage and Wagon Department at that time, which arranged their construction with the Locomotive Superintendent.[114] Unsurprisingly, therefore, only one instance has been found where a senior manager enacted a policy without notifying a committee. Shortly after his appointment in 1895, Dugald Drummond, the Locomotive Superintendent, replaced the designs of a planned series of goods locomotives with his own. Having not been notified, the Locomotive Committee directors expressed their annoyance that the change had been made without their consultation.[115]

Thus, because all the LSWR's significant decisions required, formally, the oversight of the directors, this strengthened and sustained input into the company's operational policies being limited to the self-reinforcing directorate, the General Manager and a small cadre of functionally organised senior managers; with no decision-making authority being delegated to those below

[114] HRO, 104A02/A2/15, Engineering and Stores Committee Minute and attached correspondence, 10 December 1884
[115] Bradley, D.L., *LSWR Locomotives: The Drummond Classes*, (Upper Bucklebury, 1986), p.149

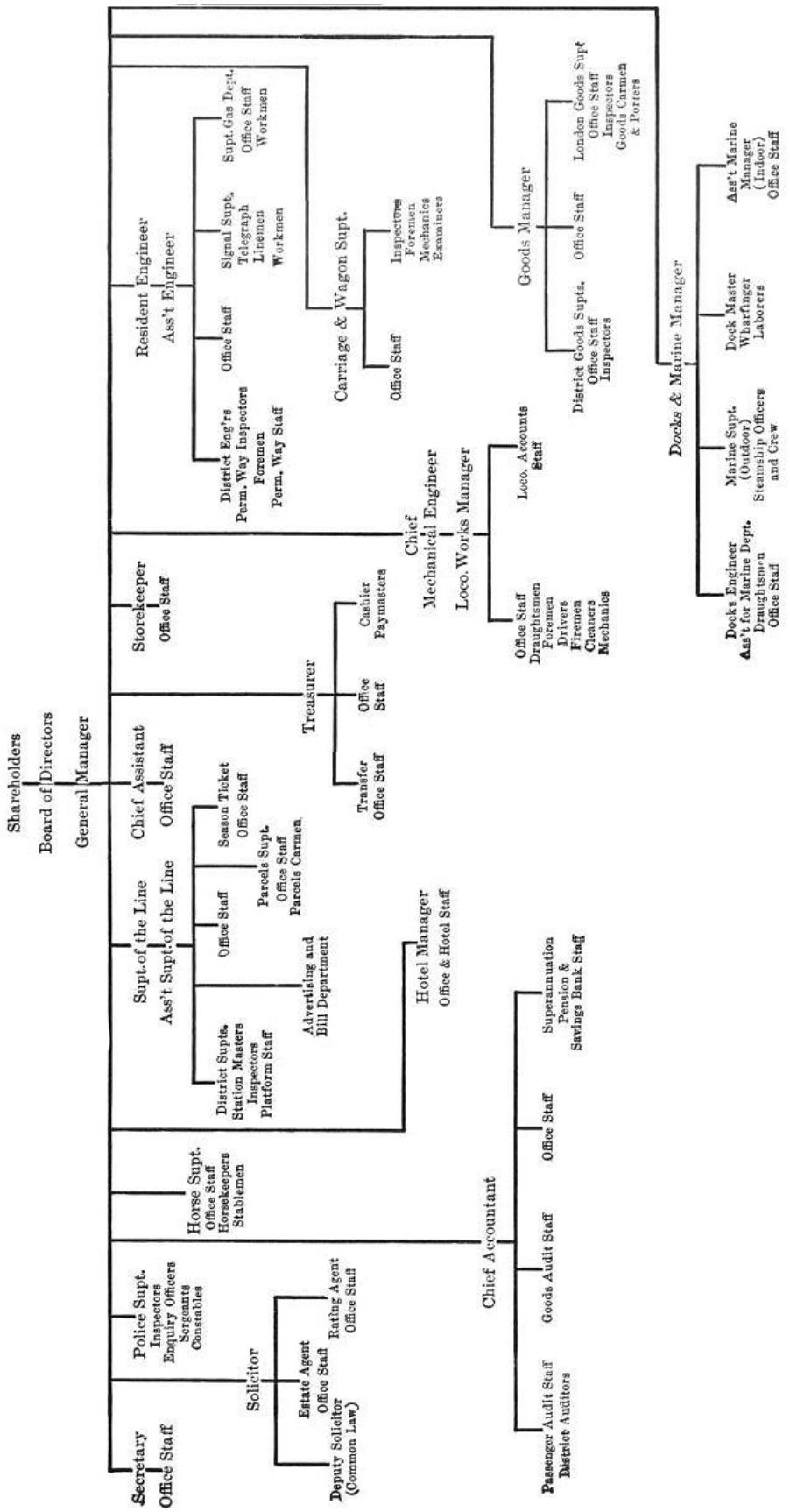


Figure 1: The LSWR's management structure in 1910, Source: Ray Morris, *Railroad Administration*, (New York, 1910), p.133

the level of the department head. As will now be explained, this arrangement frequently undermined the company's management quality and financial performance.

Section 2 – Operational Structure

2.3. Structures fit for purpose?

Given it will be described how the centralisation of decision-making authority within the LSWR harmed its operational and financial performance between 1870 and 1911, it is important to understand why the company's operational structures were never altered in this period. Like most British railway companies before 1914[116] the LSWR possessed a functional department structure. Indeed, 1910 Ray Morris used its corporate form to demonstrate that 'typically' found within the British railway industry (Figure 1).[117] Within it departments performed specific roles and only the directors and a small number of senior managers at the head of the organisation controlled corporate policy, as well as coordinated the subordinate departments' activities.[118]

Channon proposed one explanation for the functional department structures' persistence within British railways in the period, which could possibly apply in the LSWR's case. He suggested – without providing examples - that department heads vied for resources and guarded their authority.[119] Yet there is little evidence that demonstrates this was so in the LSWR's case between 1870 and 1911, with only one example found where a department head guarded his authority. Between 1881 and 1885 the directors wished to separate the Carriage and Wagon Works from the remit of the Locomotive Superintendent, William Adams, to improve departmental oversight. After he objected the change was not made.[120] Nevertheless, the company's structure was not left alone because Adams was attempting to preserve his authority; rather, the General Manager, Scott, supported Adams' perspective. Contrastingly, when Scotter became General Manager in 1885 he advocated creating a separate Carriage and Wagon Department, and Adams was unable to prevent him doing this.[121]

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[116] Bonavia, *The Organisation of British Railways*, p.21-23; Channon, *Railways in Britain and the United States, 1830-1940*, p.41-42

[117] Morris, Ray, *Railroad Administration*, (New York, 1910), p.132

[118] Bonavia, *The Organisation of British Railways*, p.16; Channon, *Railways in Britain and the United States*, p.41-42; Gourvish, T.R., 'British business and the transition to a corporate economy,' *Business History*, XIX (1987), p.26

[119] Channon, *Railways in Britain and the United States, 1830-1940*, p.42

[120] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence 1882-1884, William Adams to Engineering Committee, 12 September 1882, p.190

[121] TNA, RAIL 411/186, Locomotive and Stores Committee, Minute 235, 9 December 1885

This case highlights that only those above department heads in the LSWR's hierarchy, the General Manager and directors, had the position within the organisation to initiate change in, or complete reform of its overarching management structures. Indicative of this, the only major changes in the arrangement of the LSWR's departments before 1911 were initiated by Scotter, the General Manager; he pushed for the Locomotive and Carriage and Wagon Departments to be separated in 1885,[122] and in 1888 he removed the Goods Department directly from the Superintendent of the Line's remit and made its head directly answerable to him.[123] Conversely, the LSWR's department heads, who had complete authority over their functionally independent departments, only seemed to focus on their own concerns and, as Section 2 demonstrates, structural reorganisation was always thus regarded by them as being a department-specific activity. [124] Indeed, the functional department structure was so embedded within the LSWR's operations (and in the railway industry generally) – it having been established by 1840 – that departmental decision-makers are unlikely to have considered the question of structural reorganisations outside the bounds of their remits. Therefore, the LSWR's case does not support Channon's suggestion that functional department structures' persisted within the British railway industry between 1870 and 1914 because department heads 'guarded their authority.'[125]

Fundamentally, the LSWR's functional departmental structure survived between 1870 and 1911 because there was no clear necessity to reform or replace it. Its disadvantages – which are described at length below – were not so obvious as they are today, and, most importantly, it remained adequate for administering the company's growing network and traffic. This growth is worth considering. Between 1870 and 1911 the company's network lengthened from 665 to 964 route miles. Yet, the geographical area the company administered did not expand greatly; by 1870 the LSWR had already established its core network and major traffic centres, such as Exeter, Southampton and Salisbury, and subsequent growth in route mileage can largely be attributed to

[122] TNA, RAIL 411/186, Locomotive and Stores Committee, Minute 235, 9 December 1885
[123] *South Western Gazette*, October 1887, p.153; TNA, RAIL 411/255, Traffic Committee Minute Book, Minute No.1784, 17 August 1888
[124] TNA, RAIL 411/218, Special Committee Minute Book, 4 August 1864, p.203; TNA, RAIL 411/235, Traffic Committee Minute Book, Minute 616, 20 July 1865; TNA, RAIL 1135/270, Abstract of Instructions which have from time to time been issued to the Station Agents etc. 1 June 1865, p.99-101; TNA, RAIL 411/219, Special Committee Minute Book, Memorandum from Mr Scott to the Board of Directors, 8 January 1868, p.188; TNA, RAIL 411/239, Traffic Committee Minute Book, Minute 658, 29 July 1869; Hampshire Record Office [HRO], 104A02/A2/5, Way and Works Committee Minute 3533, 17 November 1870; C.F. Dendy-Marshall and R.W. Kinder, *History of the Southern Railway: Volumes 1 and 2 Combined*, (Shpperton, 1968), p.117; TNA, RAIL 411/182, Traffic & Locomotive and Locomotive Committees, Minute 371, 4th January 1872
[125] Channon, *Railways in Britain and the United States, 1830-1940*, p.42

the company filling gaps in its network and extending its lines beyond Exeter.[126] Additionally, the company's train movements increased by a large, but not extraordinary amount. Table 1 shows that in each decade between 1870 and 1910 the average yearly increase in the number of train miles per track mile the company ran was always less than 2.1 percent.

	Train mile per track mile in first year	Train mile per track mile ten years later	Difference	Average yearly growth	Overall percentage increase	Average yearly percentage increase
1870-1880	6,294	7,851	1,557	156	24.74%	2.03%
1880-1890	7,851	9,129	1,278	128	16.29%	1.38%
1890-1900	9,129	11,162	2,033	203	22.27%	1.84%
1900-1910	11,163	11,480	317	32	2.84%	0.26%
1870-1910	**6,294**	**11,480**	**5,186**	**126**	**82.41%**	**1.48%**

Table 1: Train mile per track mile LSWR trains ran 1870-1910. Source: TNA, RAIL 1110/281, 283 and 284, LSWR reports and accounts 1870-1910

It can, therefore, be suggested that these levels of network and traffic growth were never large enough to threaten the LSWR's operational efficiency between 1870 and 1911, and so the company's directors and General Managers never considered, or felt the need, to replace its functional department structure. The adequacy of the company's structures is also supported by the fact that before 1911 the LSWR's traffic and geographical growth never compelled department heads to develop more complex management structures within the departments beyond those they had established between 1864 and 1872 (see sections 2.4. to 2.6); the Engineering and Locomotive Department possessed three districts throughout the period, while in the Traffic Department the number shrank from seven to four. The LSWR's case therefore supports Chandler's argument that British railway companies' level of operational complexity and smaller geographical size meant their managers were not challenged to the same extent as their American counterparts to pioneer more advanced management structures.[127]

Despite the LSWR's functional department structure adequately serving the company's administrative needs between 1870 and 1911, it frequently disrupted and undermined the company's operational cohesiveness, management quality and, consequently, its financial performance. Principally this was because decision-making authority was centralised with little authority being delegated to individuals below the department head. Section 3 discusses the impact of this arrangement on the LSWR's overall business effectiveness; however, through

[126] TNA, RAIL 1110/281, 283 and 284, London and South Western Reports and Accounts, 1833-1922
[127] Chandler, *Scale and Scope*, p.253

describing the establishment and development of the three main spending departments' internal structures, the next three sections demonstrate how it negatively impacted on their management quality between 1870 and 1911. The LSWR's three spending departments were: Traffic, which oversaw goods and passengers' safe transit, and formulated the train timetables; Locomotive, Carriage and Wagon, which maintained and built the company's rolling stock and oversaw train crews; and Engineering (Way and Works before 1880), which built and maintained the infrastructure.

2.4. Traffic Department

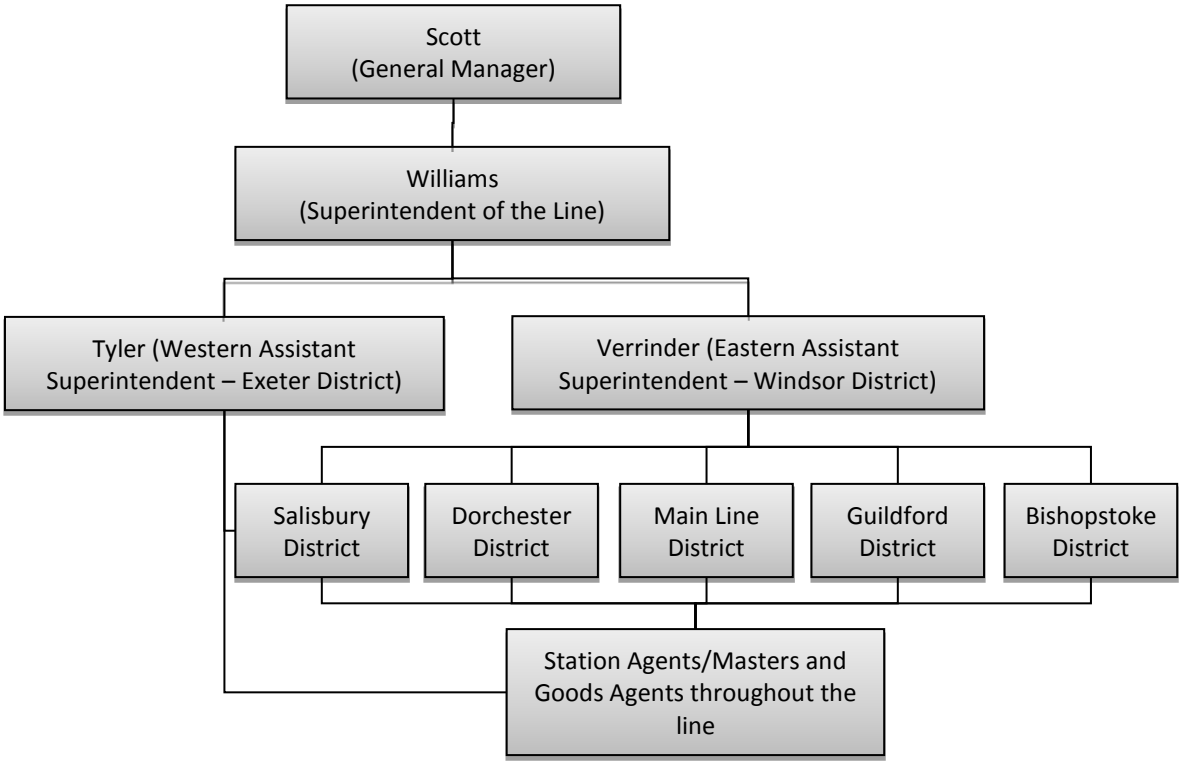

Figure 2: LSWR Traffic Department Structure in 1870, Source: TNA, RAIL 411/219, Special Committee Minute Book, Memorandum from Mr Scott to the Board of Directors, 8 January 1868

Like all of the LSWR's departments, the Traffic Department's structure was strictly hierarchical under the department head. Between 1838 and 1870 this was the Traffic Manager; a post filled from 1852 by Archibald Scott. However, when his title was changed to General Manager in 1870 he retained direct oversight of the department, and he only relinquished this responsibility in 1881[128] when Verrinder, the Superintendent of the Line, was made Traffic Superintendent.[129] When Verrinder died in 1892, the post was re-titled 'Superintendent of the Line' and filled by numerous individuals thereafter.

[128] *The South Western Gazette*, December 1881, p.2
[129] Colin Chivers and Stan Verrinder, 'LSWR Staff Portraits: E.W. Verrinder', South Western Circular, 12 (July 2002) p.169

Firstly, it is important to assess the character of the Traffic Department's internal structures. Chapter 1 discussed how there have been few studies of the managerial differences between British railway companies operating in the north of the country before 1914 and those operating in the south. However, it is in the company's operating structure that the main such differences can be found. Because a large proportion of the northern companies' traffic was freight and minerals (see Chapter 1 – Table 2), and a considerable portion of their revenue was derived from these traffics, this meant that their goods managers possessed positions of high status within them. Furthermore, many northern companies, for example the GCR, GNR and the LNWR, established dedicated Mineral Departments under Mineral Managers, to oversee and administer this trade effectively.[130] Yet, in the case of the LSWR, because only a third of its revenue was generated by goods and mineral traffic, this led to important differences in its Traffic Department's organisational form. Firstly, the Goods Manager's post, while a senior management position within the company, never had the same status as it did in other railways. Indicative of this, the LSWR's Goods Department never had any degree of influence over operational matters, as it did elsewhere,[131] and its role was simply to liaise with traders and administer the transit of goods.[132] Furthermore, the LSWR never established the post of Minerals Manager. Thus, throughout the period 1870 and 1911 it was individuals who came from the coaching section of the Traffic Department, which oversaw the passenger traffic, which had the greatest influence over the department's operational policies (see Chapters 4 to 6). However, taking into account the findings of this thesis and those found in the existing literature, it is still unclear how these different structural arrangements impacted on companies' financial performance.

Because of the Traffic Department's operations were almost wholly separated from those of the other departments, reorganisation of its internal structures were undertaken without reference to the company's broader operational concerns. The creation of the Traffic Department's internal structures had their origins in the Egham accident of 1864 and a subsequent letter from Queen Victoria requesting the directors to improve safety on the line. Following this they initiated the installation of block working throughout the company's system (described in Chapter 4).[133] Additionally, Scott established the Traffic Department's district structures to provide better

[130] TNA, ZPER 46/1*, The Railway Yearbook for 1898*, p.62, 80 and 103

[131] Author's Collection, GNR – General Instructions and Regulations for the executive department, 1856, p.2; Irving, *North Eastern Railway*, p.217

[132] TNA, RAIL 1135/270, Abstract of Instructions which have from time to time been issued to the Station Agents. etc. Previous to 1 June 1865. Passenger and Goods Traffic etc. pp.100-101; TNA, RAIL 411/221, Special Committee Minute Book, Special Committee on the Nine Elms Goods Department, 1st March 1880, p.274

[133] TNA, RAIL 1110/281, Reports and Accounts, Half-Yearly meeting of proprietors, 18 August 1864, p.4

oversight of the company's train operations. These structures also strengthened the oversight of staff at stations and goods yards. These structures were refined in 1868, and Figure 2 shows their format. [134] Under Scott, the Superintendent of the Line (Williams) oversaw two assistants (Tyler and Verrinder), who administered the company's network either side of Salisbury in addition to one of seven smaller districts the line was split into. Additionally, Superintendents oversaw five other districts.[135]

As with all the company's departments, authority within the Traffic Department was centralised. Yet, until 1884 the level of control the department head had over its functions was excessive compared with the arrangements in the Locomotive and Engineering Departments. Before 1881 Scott retained almost absolute control of decision-making within the department; and while Williams (Superintendent of the Line from 1868) administered train timetables (under Scott's guidance), Tyler, Verrinder and the District Superintendents had no decision-making powers delegated to them. In 1865 it was explicitly stated that they were not to alter trains' makeup, timetables, staff locations or fares, except in emergencies. Their responsibilities were simply to pass up to Scott information on company operations, oversee staff efficiency, advise station agents, and monitor trains' regularity and safety.[136] The superintendents therefore existed to enable Scott to maintain his authority over the Traffic Department's affairs, while ensuring its functions remained adequately supervised. Thus, as Chapter 4 discusses, as the company's network and traffic grew, his excessively close management of the department overburdened him with work and his administration reacted poorly to the challenges it faced. This was a major contributory factor in the LSWR's poor performance between 1870 and 1881.[137] Scott finally addressed the issue of his excessive workload in 1881 and relinquished direct authority over the Traffic Department to Verrinder, who became Traffic Superintendent. [138]

[134] TNA, RAIL 411/218, Special Committee Minute Book, 4 August 1864, p.203; TNA, RAIL 411/235, Traffic Committee Minute Book, Minute 616, 20 July 1865; TNA, RAIL 1135/270, Abstract of Instructions which have from time to time been issued to the Station Agents etc. 1 June 1865, p.99-101; TNA, RAIL 411/219, Special Committee Minute Book, Memorandum from Mr Scott to the Board of Directors, 8 January 1868, p.188

[135] TNA, RAIL 1135/270, Abstract of Instructions which have from time to time been issued to the Station Agents etc. 1 June 1865, pp.98-100

[136] TNA, RAIL 1135/270, Abstract of Instructions which have from time to time been issued to the Station Agents etc. 1 June 1865, pp.99-100

[137] *South Western Gazette*, January 1911, p.8

[138] TNA, RAIL 411/251, Traffic Committee Minute Book, Minute 282, 9 November 1881

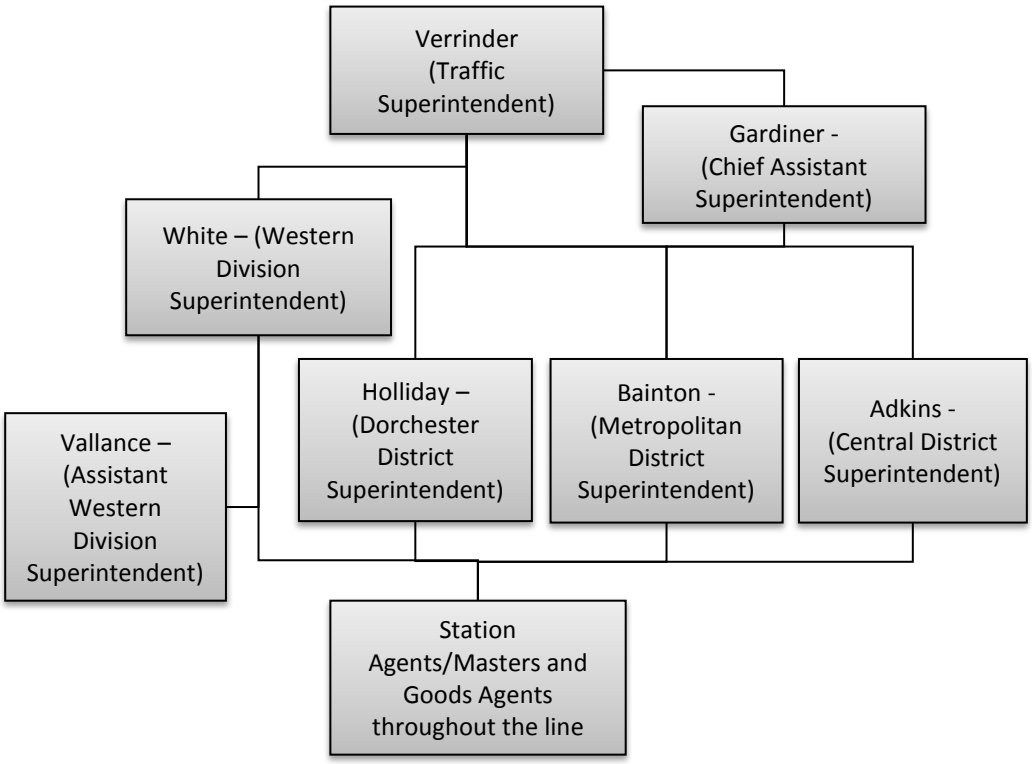

Figure 3: LSWR Traffic Department Structure 1884-1893, Source: TNA, RAIL 411/253, Traffic Committee Minute Book, Minute 1328, 15 October 1884

Numerous changes to the Traffic Department's structure occurred after 1870. Firstly, through the 1870s and early 1880s most of the small districts that had been established in 1864 had their authority progressively reduced; they were gradually phased out by the 1890s. [139] However, the Assistant Superintendencies remained – at some point around 1875 the Western superintendency became a 'division' and the eastern superintendency was renamed the Metropolitan District.[140] Furthermore, the Dorchester District was enlarged in 1882[141] and a new Central District was created in 1884.[142] The number of districts of consequence the Traffic Department possessed therefore shrunk between 1864 and 1885, and by the latter year it had three large districts and the western division (Figure 3).[143] The number of districts the department shrunk further in 1893 when Holliday, the Dorchester District Superintendent, retired and his district was absorbed into the Central District.[144] The only modification thereafter came in 1899 when the new department head, Sam Fay, added a Main Line District (Figure 5). [145]

[139] TNA, RAIL 411/492, Clerical staff character book No. 2, p,160; *South Western Gazette*, June 1892, p.10
[140] *South Western Gazette*, June 1892, p.10; *South Western Gazette*, May 1891, p.9; TNA RAIL 411/7, Court of Directors Minute Book, Minute 1593, 8 January 1885
[141] TNA, RAIL 411/492, Clerical staff character book No. 2, p,293
[142] *South Western Gazette*, October 1884, p.4; TNA, RAIL 411/253, Traffic Committee Minute Book, Minute 1328, 15 October 1884
[143] TNA, RAIL 411/492, Clerical staff character book No. 2, p,293; *South Western Gazette*, October 1884, p.4; TNA, RAIL 411/253, Traffic Committee Minute Book, Minute 1328, 15 October 1884
[144] *South Western Gazette*, 1 September 1893, p.13
[145] TNA, RAIL 411/424, General Instructions to Staff issued at Farnborough Station, Circular 271 – Rearrangement of Traffic Districts, 31 May 1899, p.269

Overall, between 1870 and 1911 the Traffic Department's districts reduced in number from two large and seven small districts, to four large. It can be suggested this shrinkage was the result of block working's introduction. After the Egham accident this was installed across the company's network between 1865 and 1875. Consequently, signalmen's control of the trains became increasingly governed by formal rules, with changes in local signalling arrangements coming via circulars, rather than through oral instructions from senior officers. For instance, signalling instructions in working timetables progressively grew in number after 1865.[146] Consequently, because train working became increasingly formalised, district superintendents were not required to monitor their subordinate's actions so closely, reducing the need for the Traffic Department to possess so many districts.

These changes in the Traffic Department's districts did, however, undermine the department's operational performance and management quality between 1870 and 1911– principally because they strengthened the centralisation of authority within it. Even though after 1884 the heads of the Traffic Department did not control its functions as closely as Scott did,[147] because the number of districts shrunk the number of senior officers within the department who had any influence on policy remained small, despite the company's geographical size, traffic and operational complexity increasing (see Table 1). In 1870 the structure had, at most, four individuals that had

[146] South Western Circle Collection [SWC], London and South Western Railway October 1867 Working Timetables of Passenger and Goods Trains, p.80-81; SWC, London and South Western Railway February 1874 Working Timetables of Passenger and Goods Trains, p.117-119; SWC, Instructions to Station Agents, Inspectors, Enginemen, Guards, Signalmen, Pointsmen, Porters and all concerned: New Signals at Waterloo Station, 15 March 1869; SWC, Instructions to Station Agents, Inspectors, Enginemen, Guards, Signalmen, Pointsmen, Porters and all concerned: New and altered signals, Instruction Number 44, 26 April 1872; Williams, *The London and South Western Railway*, p.303

[147] *Railway Magazine*, May 1904, p.427

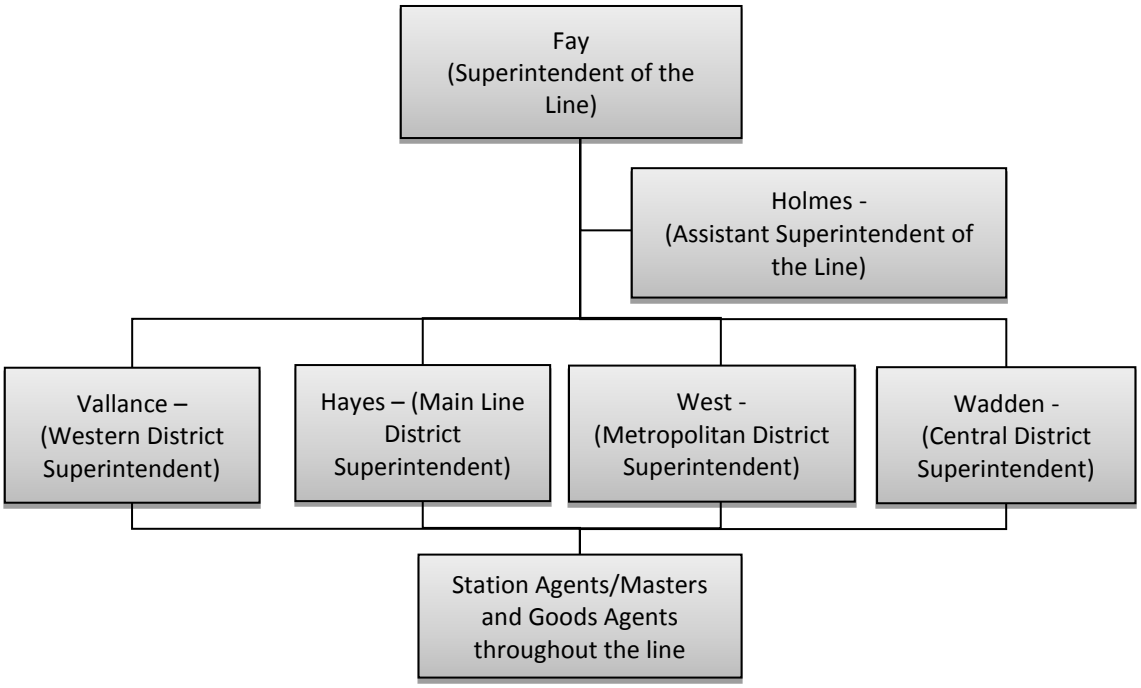

Figure 4: LSWR Traffic Department Structure, 1899-1912. Source: TNA, RAIL 411/424, General Instructions to Staff issued at Farnborough Station, Circular 271 – Rearrangement of Traffic Districts 31 May 1899, p.269

an input into policy; the General Manager, Superintendent of the Line and his two assistants. By 1911 the number had only increased to six: the Superintendent of the Line, his assistant and the four district superintendents.

Thus, throughout the period the department's management quality was largely contingent on a very small group of individuals' capacity to innovate and manage their affairs efficiently. However, because traffic managers could occupy positions for decades – for instance Scott remained at the department's head between 1852 and 1881 – without experiencing developments in railway organization outside the company and without many constraints on their independence, their thinking potentially could stagnate, the value of established management practices were not questioned and inefficiencies could develop within the company, as was the case with Scott's methods of train control before 1884 (see Section 2.6).

Furthermore, as Chapter 3 elaborates on, this propensity for senior officials' thinking to tend towards conservatism or stagnate was compounded by the fact that the Traffic Department's structure increasingly hindered skilled and innovative individuals lower down the department's hierarchy reaching positions of influence quickly, if at all. As the company's traffic and trade rose after 1870 this was, accordingly, administered by an increasing number of clerks – who were realistically the only department employees who could rise into senior management posts. Yet,

because the number of influential senior traffic management posts remained small, and managers stayed in position for long periods, those individuals who were particularly talented had far fewer opportunities to reach positions where they could bring their skills and ideas to bear on company policy. For example, as Chapter 3 discusses in more detail, Sam Fay – who was arguably one of the most talented managers of his generation – was hindered from reaching an influential management post by a lack of promotional opportunities.

Lastly, because between 1870 and 1911 senior traffic managers did not delegate decision-making powers to subordinates, this created and sustained a culture of deference to authority within the department. *The South Western Gazette (SWG)*, the LSWR's staff magazine which was largely written by traffic clerks, the company's future managers, frequently praised senior managers and directors' management of the company's affairs, irrespective of their actual performance. This could cause what in retrospect appears to be amusing about-turns of opinion. For example, Sam Fay wrote in 1905 that when Scotter became General Manager norms of behaviour he had acquired during Scott's poor General Managership had to be totally disregarded. [148] Yet, Fay overlooked the fact that in the early 1880s he had praised Scott's management of the company in his diary and as editor of *SWG*.[149] Therefore, for Fay what constituted 'good' management technique in the 1880s was defined by the officials who headed the department; not his own judgement. Thus, the combination of the lack of delegation of authority, and clerks and managers' deference to it, meant senior traffic officials' actions were rarely questioned by subordinates, even if they had ability or knowledge to do so.

It is important to note, however, that at different points between 1870 and 1911 the Traffic Department's management practices did advance and modernise. However, this was rarely because of traffic managers who had spent most of their careers within the department. As chapter 3 discusses, most traffic managers had passed through the department's introvert and rigid clerical promotional trees, had never worked outside the company and did not have the range of employment experiences that would have allowed them to critically appraise its established operational practices. There was consequently little natural development, advancement or even improvement of managerial or operational techniques from within the Traffic Department between 1870 and 1911 (see Chapter 3). Indeed, as Chapter 6 shows, even after 1900 when career LSWR traffic managers were challenged by the company's depressed

[148] *Great Central Railway Journal*, July 1905, p.3
[149] WFC, Sam Fay Diary, various entries; *South Western Gazette*, 1 December 1884, p.4

profitability to innovate and find cost efficiencies, they were seemingly unable to reform the department's established management practices to any great degree.

Thus, advancements in operational practice principally occurred when new senior managers were appointed who previously had been employed in other railways. For example, when Scotter joined the company as General Manager from the MSLR in 1885 he completely reformed the Traffic Department's management (see Chapter 5). Furthermore, while Fay had spent much of his career within the LSWR, when he returned after seven years outside it to become Superintendent of the Line he introduced a new spirit of innovation into the department (see Chapter 6).

Overall, the Traffic Department's internal structures strengthened and sustained influence and authority over its policies being restricted to the few individuals at its head. As this section has shown, and Chapters 4 to 6 discusses in detail, these structures harmed the LSWR's managerial performance between 1870 and 1911 in three main ways: senior managers could sit in posts for decades, meaning management practice and thought could stagnate; innovative and skilled managers were hindered from reaching positions where they could positively influence policy, and the lack of delegation of authority within the department created deference to it.

2.5. Locomotive (Carriage and Wagon) Department

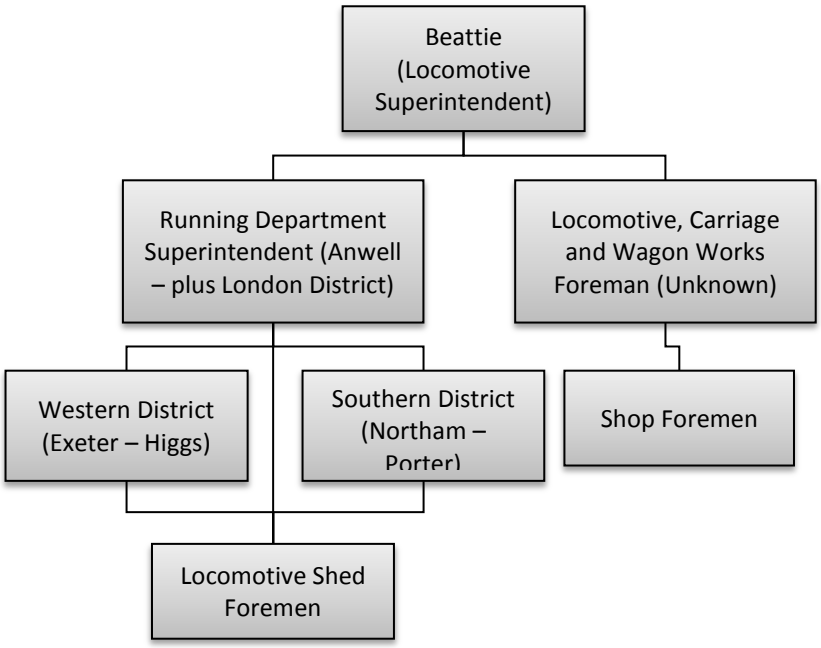

Figure 5: LSWR Locomotive Department Structure 1872-1885. Source: TNA, RAIL 411/182, Traffic & Locomotive and Locomotive Committees, Minute 371, 4th January 1872

The Locomotive, Carriage and Wagon Department's (hereon known as the 'Locomotive Department') overall structure changed little between 1870 and 1911. Like the company overall, the department was strictly hierarchical. The Locomotive Superintendent (Chief Mechanical Engineer from 1904[150]) had overall responsibility for managing its functions efficiently. He reported to the committee that oversaw the department and in discussion with it made decisions regarding all matters of policy.[151] Like in the Traffic Department's case, the Locomotive Department's functions were separate from those of the other departments and, therefore, changes to its structure were made without reference to their heads' concerns.

Running Department

In 1870 the Locomotive Superintendent oversaw two sections, each headed by a supervisor. The first of these was the Running Department, which administered the company's locomotive sheds and oversaw the drivers and firemen, except when they were working on the line when they were under the Superintendent of the Line's charge. [152] It established its district structures in 1872. In 1870 Anwell, the chief foreman, oversaw the whole of the department directly. In late 1871 Joseph Beattie, the Locomotive Superintendent, died and his son, William, replaced him. Presumably to improve the administration and oversight within the department he created three districts. Anwell retained overall charge of the Running Department and control of all sheds in the London District; while Porter and Higgs became Southern and Western District Foremen respectively (Figure 5).[153] In this structure larger running sheds – for example Nine Elms – oversaw smaller satellites – like Hampton Court.[154]

The three-district structure did not change after 1872; Table 2 shows it was still in place in 1906.[155] This was despite traffic and network growth placing considerable extra administrative demands on the department between 1870 and 1911. Locomotive numbers increased significantly over this period. In 1870 the department was operating 280 locomotives, but by 1911 the total was 748.[156] Accordingly, the number of footplate crew the department oversaw

[150] TNA, RAIL 411/58, Court of Directors Minute Book, 31 May 1906, p.66
[151] HRO, 104A02/A2/15, Engineering and Stores Committee, Minute No. 1200, 26th November 1884; Chris Hawkins and George Reeve, *London and South Western Railway Engine Sheds: Western District*, (Pinner, 1990) p.3 and p.138; TNA, RAIL 411/182, Locomotive Committee Minute Book, Minute 394, 7 March 1872
[152] TNA, RAIL 411/182, Traffic & Locomotive and Locomotive Committees, Minute 371, 4th January 1872
[153] TNA, RAIL 411/182, Locomotive Committee Minute Book, Minute 394, 7 March 1872
[154] TNA, RAIL 411/469, Locomotives, boilers, rolling stock, etc: correspondence, Locomotive Bases, 3 March 1878, p.764
[155] Hawkins and Reeve, *London and South Western Railway Engine Sheds,* p.3
[156] Board of Trade, *Railway Returns,* 1870, 1885, 1900

would have increased, although these figures are unknown. The LSWR's growing network also meant the number of locomotive sheds the Running Department was administering increased from twenty-seven in 1878[157] to forty-two in 1911. While many of these new sheds were small, housing only one or two locomotives where lines terminated (so as to stable locomotives at the end of branch lines overnight, ready for early trains), many established sheds were enlarged. For example, the Salisbury shed was enlarged in 1885, while the shed at Exeter was replaced in 1887 by a larger building at Exmouth Junction.[158]

London	**Southern**	**Western**
NINE ELMS	*NORTHAM*	*SALISBURY*
Fulwell Junction	Bishopstoke/Eastleigh	YEOVIL
Ascot	Andover Junction	Templecombe
Windsor	Gosport	Chard
Reading	Bishops Waltham	*EXMOUTH JUNCTION*
Leatherhead	Southampton Docks	Seaton
Hampton Court	*PORTSMOUTH (Fratton)*	Sidmouth
Chertsey	Midhurst	Budleigh Salterton
Woking	*BOURNEMOUTH*	Exmouth
GUILDFORD	Hamworthy Jct	Okehampton
Ash	Wimborne	Bude
BASINGSTOKE	Swanage	Holsworthy
	DORCHESTER	BARNSTAPLE
	Weymouth	Ilfracombe
		Torrington
		PLYMOUTH (Friary)
		Devonport
		WADEBRIDGE
		Launceston

Table 2: LSWR locomotive shed structure in 1906. Locomotive numbers are only known for the Western District. Source: Chris Hawkins and George Reeve, *London and South Western Railway Engine Sheds: Western District*, (Pinner, 1990) p.3 and p.138

Despite the administrative work of the Running Department growing after 1872, its three-district structure was simply adapted to accommodate network expansion, additional sheds and increased locomotive and staff numbers. The result was that after 1870 the workload of those at the department's head, who had ultimate responsibility for overseeing its functions, would have increased considerably. For instance, when Higgs, the Western District Locomotive Foreman

[157] TNA, RAIL 411/469, Locomotives, boilers, rolling stock, etc: correspondence, Locomotive Bases 3 March 1878, p.764

[158] Hawkins and Reeve, *London and South Western Railway Engine Sheds: Western District*, p.24-25, p.55-p.63

between 1872 and 1882, died in 1913, his obituary stated that while in the position his responsibilities had increased as the company had extended westward and its business had grown.[159] It is, however, plausible to suggest that senior officials' progressively increasing workload diminished their ability to oversee the Running Department's functions effectively, harming its efficiency. This argument is supported by the fact that after 1900 – when the company's profitability came under significant pressure from external sources – Drummond, the Locomotive Superintendent, established a Running Department inspectorate to strengthen oversight of the company's traincrews in an attempt to improve their operational efficiency (see Chapter 6). [160]

The Running Department's inspectorate could also reflect how the centralisation of authority in the department was weakening its management quality in another way. The absence of structural change in the Running Department after 1872 meant that some senior officials in influential positions stayed in place for decades. Anwell was Running Department foreman between 1857 and 1880;[161] while his successor, Higgs, retired in 1902.[162] As such, because only a small number of senior officials could influence the Running Department's policies, this potentially meant that over time – if their activities were not adequately critiqued by the Locomotive Superintendent, as was the case with William Beattie in the 1870s (see Chapter 4)[163] – an environment was established where their ideas on railway administration could tend towards conservatism, meaning that established management practices were not frequently reassessed and inefficiencies within the department were allowed to develop. Additionally, because there was so little turnover in the department's senior officials between 1870 and 1911, it is plausible to suggest that talented individuals lower down its hierarchy, if they did exist, were blocked from rising into influential positions where they could have improved or positively reformed its management. As such, the Running Department inspectorate may have reflected a conservatism that had developed amongst its senior officials, which led to a stagnation of its management practices. Without more evidence this remains conjecture.

Irrespective of the primary reason the Running Department inspectorate was established in 1908, it was undeniably instituted to counter weaknesses that had developed in the oversight of the

[159] *South Western Gazette*, 1 February 1913, p.9
[160] TNA, RAIL 411/194, Locomotive and Stores Committee Minute Book, Minute 1154, 22 January 1908; *Railway Gazette*, 14 February 1908; *South Western Gazette*, 1 February 1908, p.13
[161] *South Western Gazette*, December 1881, p.7
[162] *South Western Gazette*, 1 February 1913, p.9
[163] TNA, RAIL 411/469, Locomotives, boilers, rolling stock, etc: correspondence, 1868-1878, Letter from William Beattie to Arthur, E. Guest, 31 January 1882, p.1

department; weaknesses that were principally the result of authority and oversight within the department being centralised.

Locomotive, Carriage and Wagon Works

The LSWR's Locomotive Department also oversaw the locomotive, carriage and wagon works. Once again, an analysis of the how these works were managed highlights that because authority within the company's departments was centralised, its management quality and financial performance could be undermined.

Between 1870 and 1885 the Locomotive Superintendent had direct charge of the locomotive carriage and works – aided by an assistant[164] – and these mostly built and always maintained the company's locomotives and rolling stock. By the early-1880s, as the company built and acquired more locomotives, carriages and wagons to facilitate increased levels of traffic, by the early 1880s the superintendent's burden of work had increased to the point where the efficient oversight of the works was weakened, causing inefficiencies to develop, raising company costs.[165] To alleviate this situation, in August 1885, under Scotter's advisement, director Guest suggested to the Locomotive Committee that a separate Carriage and Wagon Department be created.[166] This was agreed to; the locomotive works remained under Adams, and the Carriage and Wagon Department was overseen by a new superintendent, Panter.[167] As Chapter 5 discusses, this move enhanced the management quality within both the locomotive and the carriage and wagon works, which improved their cost position. Indeed, it will be demonstrated that Adams particularly had more time to dedicate to innovation, experimentation, gauging efficiently the company's locomotive needs, and effectively managing the works.[168]

The centralisation of authority within the works' administrative structures created a situation where, it would seem, Adams was blind to the weaknesses in his management. He would not, or could not, acknowledge the potential efficiency gains that could have been achieved by removing

[164] HRO, 104A02/A2/4, Locomotive Committee Minute Book, 20 December 1866, p.2480
[165] TNA, RAIL 411/186, Locomotive and Stores Committee, Minute 235, 19 August 1885; G.R. Weddell, *L.S.W.R. Carriages: Volume One 1838-1900*, (Didcot, 1992), p.209-244; *South Western Gazette*, February 1886, p.16; TNA, RAIL 411/186, Locomotive and Stores Committee, Minute 235, 9 December 1885
[166] TNA, RAIL 411/186, Locomotive and Stores Committee, Minute 235, 19 August 1885
[167] TNA, RAIL 411/186, Locomotive and Stores Committee, Minute 341, 25 November 1885
[168] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 317, 11 November 1885; D.L. Bradley, *LSWR Locomotives – the Adams Classes*, (Upper Bucklebury, 1985), p.35; TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 146, 24 June 1885; TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 917, 16 March 1887

the carriage and wagon works from his remit. Indicative of this, in 1882 he successfully prevented the carriage and wagon works being split from his remit.[169] Thus, only the directors and General Manager had the position above Adams in the company's hierarchy to recognise where changes in his remit were required to improve corporate efficiency.

The centralisation of authority within the works was also injurious to its management quality for another reason. Because Locomotive Superintendents retained their positions for decades, with almost complete control over policy in their fiefdoms, this meant there was huge potential over time for their thinking on administrative practices and policy to become narrow, and established management practices to continue without their value being reassessed frequently. For instance, between 1878 and 1887 Adams considerably improved the Locomotive Works' efficiency through expanding, re-equipping and reorganising them.[170] Yet, without pressure being placed on him to improve his management, he did not adapt his informal style of works management, which was suitable for a smaller locomotive works of the 1870s, to cope with LSWR's locomotive stock growing from 386 in 1878 to 664 in 1895.[171] Thus, compounded by his increasing vagueness and reliance on Pettigrew, his works manager, to run his affairs,[172] by his retirement in 1895 the quality of management in the works had weakened and inefficiencies had developed (See Chapters 4 to 6).

Conversely, his successor, Drummond, reformed the Locomotive Works' management after 1895, highlighting how the natural tendency for a department's management practice to stagnate under one head could be remedied by the appointment of another. He introduced more systematic and modern management techniques into the works. Section heads received greater independence and minimal day-to-day contact with Drummond; whilst weekly progress meetings were held in his presence at which they reported on locomotive repairs and construction, schedules were agreed to, and, if prior schedules had not been met, explanations why would be demanded.[173] These reforms, which devolved greater responsibility to section heads for their own working performance, better suited the management of the larger works. Consequently, by 1896 the works had reached full operational capacity, general locomotive repairs had been

[169] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence 1882-1884, William Adams to Engineering Committee, 12 September 1882, p.190
[170] TNA, RAIL 411/221, Special Committee Minute Book, Special Committee upon Rolling Stock and Nine Elms Shops, 26 February 1879, p.238
[171] TNA, RAIL 1110/281, 282 and 284, London and South Western Reports and Accounts, 1833-1922
[172] Bradley, *The Drummond Greyhounds of the LSWR*, p.8; Chacksfield, *The Drummond Brothers: A Scottish Duo*, p.57
[173] Bradley, *The Drummond Greyhounds of the LSWR*, p.8; Chacksfield, *The Drummond Brothers: A Scottish Duo*, p.57

reduced to five days and the construction of locomotives was governed by fixed terms (see Chapter 6).[174]

Overall, this section has again demonstrated that because within the LSWR departments responsibility for ensuring their management quality rested with the few individuals at their head, this undermined the company's managerial and financial performance between 1870 and 1911. The management quality within the works declined after 1878 because Adams, who had few constraints on his freedom to manage the department as he so wished, was the sole individual with decision-making authority within it. Before 1885 he was apparently unable to see, or did not acknowledge, that his excessive workload was harming the efficient management of the works, while thereafter he lacked the experience or knowledge to adapt the management practices he had introduced in 1878 to the increasingly complex industrial operation the works had become. For both these reasons, under Adams the works was never as efficient as Drummond's reforms suggest they could have been.

2.6. Engineering (Way and Works before 1880) Department Structures

In the Engineering Department's case, (Way and Works before 1880) weaknesses created by the centralisation of authority in the company's management are again evident. In early-1870 the LSWR's Way and Works Department, which was under the charge of Strapp, the Resident Engineer, oversaw the maintenance and renewal of the company's lines, [175] the Telegraph Department,[176] the Signal and Gas Department,[177] and supervised, in cooperation with the Consulting Engineer, the activities of contractors working on significant construction projects.[178]

The Way and Works' Department's district structures were established because of a scandal. In April 1870 the directors found within the department cases of paybill fraud, misappropriation of funds, men working privately for station agents during railway hours, illegal material sales and over-measurement of work. A board investigatory committee concluded that deficient internal oversight had created an environment where such activities could occur, and examined

[174] Chacksfield, *The Drummond Brothers: A Scottish Duo*, p.57
[175] TNA, RAIL 411/216, Special Committee Minute Book, Meeting as to the future mode of maintaining the lines, 30 August 1855, p.181 and 8 November 1855, p.202
[176] Hampshire Record Office [HRO], 104A02/A2/5, Way and Works Committee Minute 3533, 17 November 1870
[177] HRO, 104A02/A2/5, Way and Works Committee Minute 3533, 17 November 1870
[178] TNA, RAIL 411/216, Special Committee Minute Book, Meeting as to the future mode of maintaining the lines, 30 August 1855, p.181 and 8 November 1855, p.202

alternative administrative models for the department. [179] After consulting the GWR and Great Northern Railway's (GNR) Chief Engineers the committee initially concluded that under the Resident Engineer there should be two districts headed by district engineers. [180] However, when William Jacomb replaced Strapp in June 1870, the latter resigning in ignominy, three districts were established (Figure 6). No evidence has been found explaining why the three-district structure was eventually adopted; [181] yet it remained in place until 1911 (and thereafter).[182]

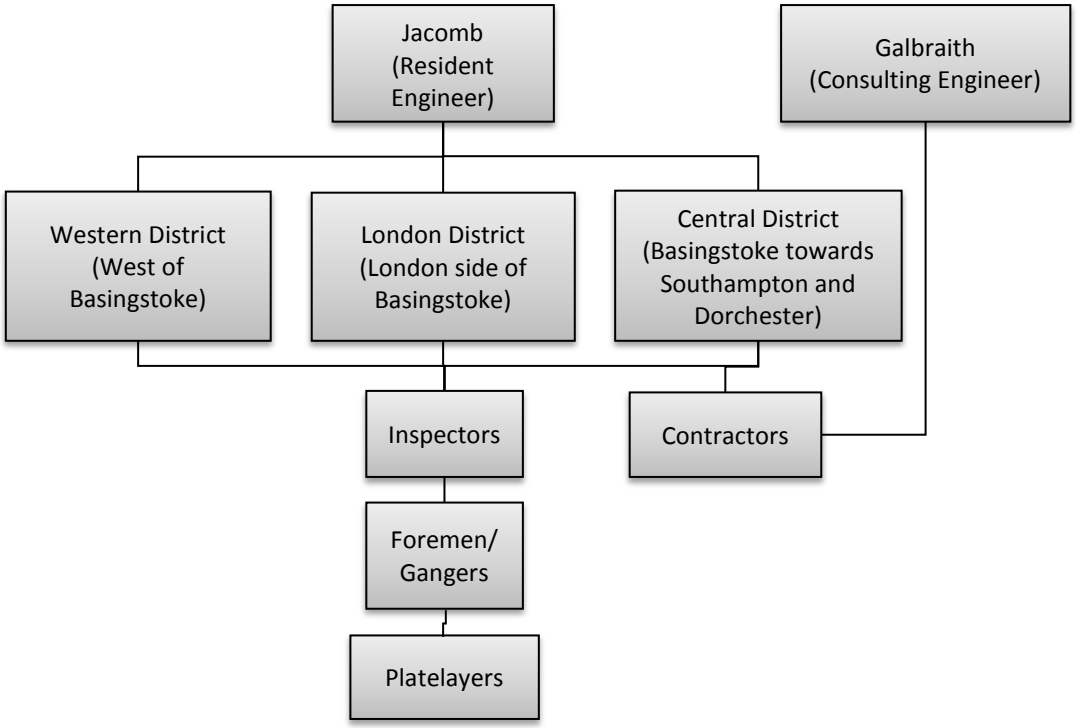

Figure 6: Main LSWR Way and Works Department main structure 1870, Source: Nick Pomfret, 'Civil Engineering (Western District) 1870-1927', *South Western Circular*, 10 (April, 1995), p.29

The District Engineers oversaw all engineering activities in their districts. They supervised major construction projects (including some design work), monitored infrastructure upkeep and authorised maintenance works, to which they appointed superintendents, inspectors, foreman, gangers and look-out men.[183] Furthermore, they liaised with contractors, who in 1885 handled all

[179] Williams, R.A., *The London and South Western Railway*, Volume 2, p.302-3; TNA, RAIL 411/220, Special Committee on Permanent Way Department, 5 May 1870, p.19
[180] TNA, RAIL 411/220, Special Committee on Permanent Way Department, 30 June 1870, p.141
[181] Nick Pomfret, 'Civil Engineering (Western District) 1870-1927', *South Western Circular*, 10 (April, 1995), p.29
[182] TNA, RAIL 411/69, Engineering Committee Letter Book, 23 June 1887, p.240; TNA, RAIL 411/424, General Instructions to Staff, issued at Farnborough Station, Arrangement of Engineering Staff, 1 March 1901
[183] Eric Penn Collection, *Instructions to Engineering Staff: Permanent way and works on the Line*, November 1896, p.1-11

'repairs of and alterations to stations, house property, bridges, viaducts, warehouses, workshops, wharves, piers, docks, receiving houses, offices and depots'.[184]

The scandal's positive outcome was that oversight of the Way and Works Department's functions was strengthened. But the scandal again reveals how the centralisation of authority within the LSWR's departments weakened the company's operational performance. The department had taken over track-maintenance responsibilities from contractors in 1856,[185] with Strapp, as department head, being solely responsible for ensuring that this was carried on in an effective manner. Evidently, his oversight of track maintenance thereafter waned, yet the scandal suggests he was not aware of, or was not willing to acknowledge, this fact. Strapp's case therefore demonstrates that because only the LSWR's department heads had the position to influence and determine policy in their fiefdoms, how effective departmental oversight was, at a time when the business was growing, was reliant on their ability to recognise what departments needed in terms of the district and supervisory officers.

Section 3 – Conclusion: Structure and management weaknesses

The previous sections have shown the numerous ways in which the concentration of authority at the head of the LSWR's three main spending departments harmed their management quality between 1870 and 1911. This section summarises these findings, but also contributes examples of how the centralisation of authority over the company's overall policies and strategies affected its operational and financial performance in this period. Additionally, this section highlights another central argument of this thesis: that the company's financial performance was also reliant on the ability of the directors and, most importantly, the General Manager to coordinate and oversee effectively the department heads' activities.

2.5. Weakness in innovation

As this thesis demonstrates throughout, the LSWR's functional department structure frequently undermined its operational and financial performance. As described above and Chapter 3 demonstrates in detail, senior managers, particularly department heads, made policy with little internal criticism of their activities from directors or other managers. Therefore, as such individuals operated largely independently, over time their views on railway management

[184] TNA, RAIL 411/389, Contracts & specification for builders' work in the Western district of the Company's system, 1 January 1885
[185] TNA, RAIL 411/216, L&SWR Special Committee Minute Book, 30 August 1855, p.181

potentially stagnated. Consequently, the worth of established operational practices was not regularly evaluated, and the company could develop inefficiencies. Examples have been cited where this was so, but the case of Scott's management of the Traffic Department after 1870 most exemplifies how these trends affected the company's overall profitability. Scott had successfully reformed the department's poor administration in 1852. [186] Nonetheless, having never experienced railway management in other companies since that time, and with few constraints on his autonomy, between 1870 and 1884 he did not adapt the train control practices he had established in the 1860s to the LSWR's increasing traffic and operational complexity. This stagnation of the company's operational practices was the primary reason for the company's terrible financial performance in the period (see Chapter 4).

However, conservative thinking on railway management amongst those at the LSWR's head also occurred because most of the company's senior traffic managers had passed through the Traffic Department's rigid and introvert clerical promotional structures. Indeed, they had a very limited range of employment experiences, were only familiar management practices within the company, and therefore lacked the capacity to think creatively (see Chapter 3). This had significant implications for the company's financial performance between 1870 and 1911. For example, after 1900 the company's profitability came under pressure from external numerous factors. This challenged the General Manager and Superintendent of the Line, who had spent their entire careers as traffic managers, to find efficiencies and effect productivity gains. Yet, they found it difficult to do this; they lacked a range of employment experiences that would have given them the skills to effectively appraise the company's established operational practices, to innovate or to find the cost efficiencies that the General Manager from 1912, Walker, showed were possible. Consequently, this contributed to the company's financial performance not improving between 1900 and 1911 (see Chapter 6). Indeed, as is shown through the thesis, senior managers who had spent their career within the company was rarely developed or acquired by themselves innovations in management practice. One exceptional case is of note. After visiting America to investigate how railroads were managed there, Jacomb-Hood, the company's Resident Engineer who had worked for the company since the 1880s,[187] introduced in 1903 a new track maintenance system which vastly improved the Engineering Department's efficiency (see Chapter 6).[188]

[186] Williams, *London and South Western Railway: Volume 1*, p.220-222
[187] *South Western Gazette*, 1 October 1901, p.9
[188] *Railway Gazette*, 13 March 1914, p.380

Fundamentally, as this thesis argues throughout, because senior managers infrequently developed new management techniques, the tendency for those in place to stagnate between 1870 and 1911 was primarily mitigated by the appointment of new senior managers who had worked in other railways. Drummond's improvement of the Locomotive Department's management after 1895 has been cited. But the most notable example of this was when Scotter became the LSWR's General Manager in 1885. After having spent his career in the MSLR, he used his extensive knowledge of how railway administration and operation had advanced in the wider railway industry to initiate managerial improvements and find efficiencies throughout the LSWR (see Chapter 5).[189] Thus, as this thesis demonstrates, the appointment of new individuals to senior management posts was vital for the rejuvenation, improvement and modernisation of the LSWR's managerial practices between 1870 and 1911.

2.6. The importance of coordination

The LSWR's functional department structure could undermine the company's management performance in other ways. As has been argued, department heads had almost sole responsibility for their functionally separated departments' efficient day-to-day working, and recommended to the relevant committee of directors or the General Manager what policies they needed enacted to achieve this (see section 2.3). As will now be discussed, the departments' operational isolation also had the potential to weaken the company's management quality and harm its financial performance.

Firstly, responsibility for overseeing whether department heads were managing their departments efficiently fell to the General Managers and directors. Yet, as the LSWR's case shows, in many instances, and for numerous reasons, these individuals were not alert to the heads' failings. For instance, in the 1870s the board did not recognise that Beattie and Scott were inefficiently managing the Locomotive and Traffic Departments. This was because most directors lacked external business experiences from which they could have acquired knowledge that would have enabled them to challenge Scott and Beattie's policies. In the 1870s most of them had been with the company since the 1850s, thus meaning their knowledge of railway management only came from practices used within the LSWR (see Chapter 3 and 4). Consequently, the company's financial performance declined after 1870.

[189] *The Times*, 14 December 1910, p. 13; TNA, RAIL 463/305, Manchester, Sheffield and Lincolnshire Railway, Staff Record 1, p.398; Hodgkins, *The Second Railway King*, p.401 and p.541

Additionally, this chapter has highlighted how department heads had the freedom to manage their fiefdoms as they saw fit between 1870 and 1911. As Irving, Bonavia and Channon argued occurred in most nineteenth-century railway companies, their independence meant they frequently lost sight of the company's overall cost position and enacted policies that harmed other departments' efficiency.[190] For example, in the early-1880s Adams, the Locomotive Superintendent, resolved the problem of the company's insufficient locomotive stock by introducing a new class of heavy locomotive. Yet, he did not fully inform the Resident Engineer, Jacomb, that this would increase the wear on the company's tracks, and, thus, maintenance costs were rapidly and unexpectedly raised (see Chapter 4).[191]

But as Chapter 4 suggests, department heads' cohesive working between 1870 and 1911 did not solely depend on their consideration of their colleague's concerns – the alignment between senior managers' philosophies of railway management was also important. For example, between 1870 and 1881 Scott poorly managed the Traffic Department because his thinking on railway operation had originated in the 1850s, when he had become Traffic Manager. However, when Adams joined the LSWR in 1878, after having experienced how railway management developed in the wider British railway industry, he challenged Scott's backward methods where his and the Traffic Department's responsibilities overlapped (operational and rolling stock policies). The conflicts between the two men, and the fact the directors increasingly - but never completely - favoured Adams' suggestions on policy over Scott's (despite the latter being given a position akin to a modern Chief Executive in 1881), meant that before 1884 the LSWR never developed coherent operational strategies to counter its excessive costs.

Overall, because the functional department structure separated the LSWR departments' functions between 1870 and 1911, the largely independent department heads regularly acted in ways that damaged the company's management quality and financial performance. However, as Scotter's example demonstrates, this weakness of the functional department structure was eliminated when they received strong leadership from an individual above them in the company's hierarchy. After 1885, and using knowledge he had gained of railway management in the wider British railway industry, Scotter gained authority over the department heads, coordinated their actions effectively and set them two corporate goals: to expand the business and reduce operating costs. These changes contributed significantly to improving the LSWR's

[190] Bonavia, *The Organisation of British Railways,* p.17-18 and p.153-154; Channon, *Railways in Britain and the United States, 1830-1940*, p.42; Irving*, The North Eastern Railway Company*, p.256
[191] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report from William Adams to Wyndham S. Portal on 'Heavy engines,' 25 August 1883, p.585

profitability (see Chapter 5). The LSWR's case therefore supports Channon's suggestion that in nineteenth century railways the capacity of functionally independent department heads to cooperate and consider matters outside their immediate remit could be contingent on General Managers' 'authority, skill and energy.'[192]

2.7. Conclusion

Until now few studies have analysed the development of a British railway company's management structures between 1870 and 1914, and how, possibly, they impacted on its operational and managerial performance. This chapter has done this in the LSWR's case. Section 2 argued that the company's functional department structure was never reformed because it was adequate for administering its functions. Nevertheless, as will be demonstrated throughout the thesis, between 1870 and 1911 the LSWR's functional department structure undermined the company's management quality and financial performance because only a small number of individuals at its head possessed decision-making authority. With many decision-makers staying in position for decades – with little constraining their ability to manage their affairs as they so wished – their thinking on railway management could tend towards conservatism and, potentially, the value of established practices were not frequently reassessed, which harmed company performance. Furthermore, because of a lack of managerial innovation within the company between 1870 and 1911, this problem only lessened when new senior managers were appointed who had been employed outside the company. Lastly, department heads, who dominated policy within their own fiefdoms, could act in ways that suited their own goals, but which conflicted with other decision-makers' objectives or harmed the company's overall performance. This problem was only resolved by the company possessing strong and knowledgeable leadership from directors or a General Manager.

[192] Channon, *Railways in Britain and the United States, 1830-1940*, p.42

Chapter 3 – LSWR decision-makers

This chapter investigates how the professional and business backgrounds of LSWR decision-makers – the directors, General Manager and senior traffic managers – influenced how they managed the company.

Chapter 2's findings make such analysis important. It contended that since decision-making authority was concentrated at the LSWR's head between 1870 and 1911, this frequently undermined the company's managerial and financial performance. Decision-makers could occupy senior positions for decades. Thus, with few constraints on their freedom to manage their affairs as they so wished, there was a propensity for their thinking on railway management to stagnate or tend towards conservatism, and, consequently, the value and efficiency of established practices was infrequently reassessed, meaning operating inefficiencies possibly developed.

However, what Chapter 2 contended is that this weakness in the LSWR's management was unlikely to be mitigated by anyone from within it. Between 1870 and 1911 the company's operational and managerial practices were rarely developed or advanced by senor manages who had been with it for decades. Thus, as this thesis contends, the rejuvenation and improvement of the company's operational practices was primarily dependent on new senior managers being appointed from external sources. This chapter starts to explain why this was so. Firstly, it demonstrates that the majority of LSWR directors had little scope to acquire experience of railway or industrial management from their activities outside the company, while all senior traffic managers had passed through the Traffic Department's rigid, introvert and isolating clerical promotional trees. Thus, these decision-makers' careers and backgrounds meant their thinking on railway management was largely, if not totally, shaped by their experiences of working in and for the LSWR. Consequently, for the most part they uncritically accepted the company's established operating practices, and were unable to effectively analyse or reappraise them to determine where they may be improved. Additionally, the majority lacked the capacity to bring to the LSWR new or innovative thinking on railway operation from external sources that might have enhanced its management quality, efficiency and financial performance.

This thesis's second central argument is that the LSWR's operational cohesiveness was dependent on the functionally independent department heads' actions being effectively coordinated and supervised by those above them in the hierarchy. This chapter demonstrates that, for the most part, between 1870 and 1911 the directors had little experience of railway or

industrial management outside the company, and, consequently, had no basis upon which to criticise department heads actions. However, in the 1870s the board had close oversight of the department heads' actions – the LSWR not possessing an individual with responsibilities akin to a modern chief executive – because many directors had been with the company for decades and had few activities outside it to occupy their time. Because the business' operational complexity increased in the 1870s, the directorate was increasingly unable to supervise or coordinate senior officer's actions closely. Consequently, the company never developed clear operational stratagems and the department heads acted independently in ways that damaged corporate efficiency.

These arguments are developed in three parts. Firstly, I analyse how sixty-two senior traffic managers' views on railway administration and operation were possibly fashioned by their careers. Secondly, I explore how directors' external business interests may have influenced their approaches to policy and potentially benefitted the company's management. Lastly, the chapter examines the factors that determined the directors' level of involvement in the company's affairs at different points between 1870 and 1911, and how their involvement shaped its policies and strategic direction.

Section 1 – The LSWR's clerical labour market and traffic managers' careers

3.1. Introduction

This section demonstrates that between 1870 and 1911 all the LSWR's senior traffic managers (defined posts in the hierarchy including and higher than District Superintendents, District Goods Superintendents or superintendents of major stations) were trained on-the-job and then passed through the Traffic Department's rigid, hierarchical and introvert clerical promotional ladder. Thus, on reaching senior management level they had learnt all they knew about railway management from within the LSWR and, thus, their capacity to innovate was limited, consequently harming the company's management quality and financial performance. Sam Fay was, however, an important exception.[193]

[193] I have chosen to study only the careers of the LSWR's senior traffic managers because the evidence available for study other departments' senior officials was poor. Also, the Traffic Department, as Chapter 2 argued, was most important to the LSWR's operational policies and strategic direction between 1870 and 1911.

3.2. Managers' positions on joining the LSWR

Managers' starting positions

Decade	Chief Clerk	Senior Clerk	Junior Clerk/ Apprentice Clerk	Lad/ Messenger	Policeman	Porter	Ticket Collector	Total
1858-1869		11	4		1			16
1870-1879	1	6	4				1	12
1880-1889		6	1					7
1890-1899		4	10					14
1900-1911		2	9	1		1		13
Total	**1**	**29**	**28**	**1**	**1**	**1**	**1**	**62**
1858-1869		68.75%	25.00%		6.25%			100.00%
1870-1879	8.33%	50.00%	33.33%				8.33%	100.00%
1880-1889		85.71%	14.29%					100.00%
1890-1899		28.57%	71.43%					100.00%
1900-1911		15.38%	69.23%	7.69%		7.69%		100.00%
Total	**1.61%**	**46.77%**	**45.16%**	**1.61%**	**1.61%**	**1.61%**	**1.61%**	**100.00%**

Table 1: The position in which LSWR traffic managers appointed between 1858 and 1870 began their career, sorted by the decade in which they first became a senior traffic manager. Source: Staff Records, *South Western Gazette*, Traffic Committee Minute Books

To understand why LSWR senior traffic managers developed deference to authority and conservative thinking between 1870 and 1911, it is important to examine the uniformity of the career paths. The best way to do this is to study the position in which they started their railway careers. Table 1 shows the starting position of sixty-two LSWR senior traffic managers who worked between 1870 and 1911. This data is organized by the decade in which they were appointed to their first senior management position.[194]

The evidence shows that most senior traffic managers begun their LSWR careers in clerical positions. There were three exceptions: one had joined as a ticket collector, another as a policeman and another as a porter. This indicates that promotional paths within the Traffic Department's secondary labour market – that is all non-clerical staff – were largely separated from those in the primary labour market. This mirrors Howlett's findings in the GER's case.[195] It is

[194] No LSWR traffic managers were directly appointed from external sources between 1870 and 1911.
[195] Howlett, 'The Internal Labour Dynamics of the Great Eastern Railway Company, 1870-1913', p.404

unclear why these individuals transferred to the primary labour market. Two, Spencer (policeman) and Veazey (ticket collector), transferred in the company's formative years (1852 and 1860), suggesting that in the period management structures' evolving nature meant the boundaries between the white and blue-collar employees had not yet solidified. In short, before 1870 the Traffic Department felt free to look beyond existing clerical staff to fill vacancies at higher levels, and it extended its labour pool by using the secondary labour market.[196]

Between 1870 and 1911 the overwhelming majority of the LSWR's senior traffic managers, fifty-nine in total, began their careers on the clerical promotional ladder (lad, messenger, apprentice clerk, junior clerk, senior clerk, chief clerk). This meant their career experiences were broadly similar, and Table 2 gives an idea of the positions they passed through before reaching senior management.

<table>
<tr><td>1</td><td colspan="3">Lad/Messenger</td></tr>
<tr><td>2</td><td colspan="3">Junior/Telegraph Clerk</td></tr>
<tr><td>3</td><td rowspan="3">Senior Clerk</td><td>Senior Clerk</td><td rowspan="2">Goods Clerk</td></tr>
<tr><td>4</td><td>Station Master-1</td></tr>
<tr><td>5</td><td>Station Master-2</td><td rowspan="2">Goods Agent</td></tr>
<tr><td>6</td><td rowspan="6">Chief Clerk</td><td>Station Master-3</td></tr>
<tr><td>7</td><td>Station Master-4</td><td rowspan="2">Goods Canvasser/Chief Goods Clerk</td></tr>
<tr><td>8</td><td>Station Master/Assistant District Superintendent-5</td></tr>
<tr><td>9</td><td>District Superintendent-1</td><td>Goods Superintendent-1</td></tr>
<tr><td>10</td><td>District Superintendent-2</td><td>Goods Superintendent-2</td></tr>
<tr><td>11</td><td>District Superintendent-3</td><td>Goods Superintendent-3</td></tr>
<tr><td>12</td><td colspan="3">Department Head (Superintendent of the Line/Goods Manager)</td></tr>
</table>

Table 2: Typical promotional paths of LSWR traffic managers 1870-1911; senior management positions are shaded. Source: Staff records

These career ladders were very rigid, with vacancies always being filled by individuals lower in the hierarchy. We can get a sense of what this meant in practice from a diary written by Sam Fay – who later became Superintendent of the Line – when he was employed as a clerk at Kingston Station between 1871 and 1881. In February 1878 the Chief Clerk at Queens Road Station was rumoured to be leaving. Fay asked Petit, the Kingston Station Agent (now more commonly known as Station Master), for permission to apply for the vacancy. Petit advised him against it and he did not.[197] By 1881 Petit was more amenable to Fay being promoted, given his ambition, and

[196] TNA, RAIL 411/492, Clerical staff character book No. 2, p543; *South Western Gazette*, September 1888, p.11-12

[197] William Fay Collection [WFC], Sam Fay's Diary, 25 February 1878

submitted to Scott Fay's application for an unknown agency that had become vacant.[198] These were two of many instances where Fay attempted to gain promotion. On each occasion, like most traffic managers in the sample, he applied for positions directly above him in the Traffic Department's clerical staff hierarchy.

Between 1870 and 1911 senior traffic managers' narrow views on railway management and limited capacity to innovate, which Chapters 4 to 6 demonstrate, was therefore rooted in the fact most of them had only directly experienced the clerical side of railway work throughout their careers. This did not mean they completely lacked understanding of manual railway work; but their career paths meant they could not bring a range of employment experiences to their work as managers.

All in the section

The situation was worse than this: most managers spent their careers within the sub-sections of the Traffic Department that recruited them, limiting their range of working experiences even further. Table 3 shows the sampled traffic managers' career paths. The Coaching Section broadly covered activities not specifically related to goods traffic (which the Goods Department administered), and 'general' positions dealt with both the Coaching and Goods Departments, or were in the General Managers' office. Thirty-eight out of the sixty-two traffic managers sampled reached senior management posts in the sections of the Traffic Department where they began their careers, while twelve followed similar career paths and finally entered general management positions. Consequently, between 1870 and 1911 fifty of the sixty-two senior traffic managers were promoted vertically up the Traffic Department's hierarchy.

Few senior traffic managers were transferred into the Traffic Department's sections from elsewhere in the LSWR. Seven moved between the sections; while five moved into the Traffic Department from another department. One joined from the Law Clerk's office,[199] another from the company's police service, [200] two from the Goods Audit Office[201] and one from the Passenger Audit Office. [202] None of these individuals are likely to have brought to the Traffic Department

[198] WFC, Sam Fay's Diary, 13 May 1881
[199] TNA, RAIL 411/492, Clerical staff character book No. 2, p.263
[200] TNA, RAIL 411/492, Clerical staff character book No. 2, p.543
[201] TNA, RAIL 411/492, Clerical staff character book No. 2, p.18; TNA, RAIL 411/499, Salaried staff register No. 2, p.559
[202] TNA, RAIL 411/492, Clerical staff character book No. 2, p.10

significantly experience of management practices found elsewhere in the company; especially as three had started their careers in audit offices related to the Traffic Department's work.

Consequently, between 1870 and 1911 senior traffic managers' traditional viewpoints on railway management and limited ability to think creatively was likely strengthened by the fact that few had experienced railway work outside their particular section of the Traffic Department.

Promotional Path (From-To)	1858-1869	1870-1879	1880-1889	1890-1899	1900-1911	Total
Coaching-Coaching	6	3	2	2	5	18
Goods- Goods	2	6	1	6	4	19
General-General	1	0	0	0	0	1
Promotions solely within the Department	9	9	3	8	9	38
	56.25%	75.00%	42.86%	57.14%	69.23%	61.29%
Coaching-General	2	1	0	3	2	8
Goods-General	1	0	0	1	0	2
Other-General	0	0	1	1	0	2
Total into General Management	3	1	1	5	2	12
	18.75%	8.33%	14.29%	35.71%	15.38%	19.35%
Total Straight Promotion	*12*	*10*	*4*	*13*	*11*	*50*
	75.00%	*83.33%*	*57.14%*	*92.86%*	*84.62%*	*80.65%*
Coaching-Goods	2	0	0	0	2	4
Other-Goods	1	1	0	0	0	2
General-Coaching	0	0	0	1	0	1
Goods-Coaching	0	1	1	0	0	2
Other-Coaching	1	0	2	0	0	3
Total inter-sectional movement	4	2	3	1	2	12
	25.00%	16.67%	42.86%	7.14%	15.38%	19.35%
Total	16	12	7	14	13	62

Table 3: LSWR traffic managers' career paths 1870-1911, according to the decade in which they were appointed. Source: Staff Records, *South Western Gazette*

Clerical work

Therefore, between 1870 and 1911 the senior traffic managers would have known little of railway work outside their particular section of the Traffic Department, which contributed to their capacity to innovate or think opportunistically being limited. This was compounded by most traffic managers having spent years – sometimes decades – in clerical posts requiring dedication to highly routine and mundane work where the hours were long. While Kingsford and McKenna argued this was the nature of clerical work on Britain's nineteenth-century railways, Fay's diary

gives first-hand examples.[203] In April 1878 he wrote: 'Mr Osborne did not turn up so I had to check another weeks work, the member went home on Saturday with bad face ache.'[204] On Christmas Day 1879 he stated he 'had to work duced hard this week with the parcels work, have taken to the abstracts which Barnard has got a week behind with.'[205] Lastly, in August 1880 he recorded: 'This goods relief is rather too much of a good thing, have to work till 9 o'clock at night.'[206] These and other examples demonstrate that LSWR clerks' work was repetitive and laborious. Most importantly, such work gave future traffic managers little scope or time to gain direct experience of railway practices outside of the tasks they were performing. Indeed, the nature of traffic managers' careers was exemplified by a statement made by a clerk in September 1909; an LSWR clerk was 'shut up in his office during the whole of the day and has no opportunity of seeing what is going on outside.'[207]

Employment experiences narrowing

Additionally, LSWR traffic managers' narrow perspectives on railway management likely became progressively more pronounced between 1870 and 1911. Over this period a decreasing proportion of traffic managers had worked in other industries and professions before coming to the railway. Table 1 demonstrates that most senior traffic managers appointed between 1858 and 1869 were not appointed directly to junior positions and it is presumed they were employed elsewhere before joining the LSWR. The previous occupations of three such traffic managers suggest the experiences the company was looking for before the mid-1860s. William Snow, Exeter Goods Superintendent between 1875 and 1899, joined the company in 1863 after a short period working for its delivery agents, Pickfords. [208] James Haddow, who was recruited in 1852 and was the company's Goods Manager between 1862 and 1888, was employed by the LSWR's solicitors, Bircham and Son, until he was nineteen.[209] Lastly, the 1861 census lists Joshua Avery, who became a clerk in 1867 at the age of twenty-nine and was the Plymouth Goods Superintendent between 1876 and 1899, as a railway carrier's agent.[210] All these individuals were employed by companies or in occupations that served the LSWR's needs; suggesting that before the mid-1860s the Traffic Department used businesses it worked with to increase its pool of

[203] Kingsford, *Victorian Railwaymen*, p.117; McKenna, Frank, *The Railway Workers: 1840-1970*, (London, 1980), p.101-108
[204] BFC, Sam Fay's Diary, 8 April 1878
[205] BFC, Sam Fay's Diary, 25 December 1879
[206] BFC, Sam Fay's Diary, 12 August 1880
[207] *South Western Gazette*, September 1909, p.13 and October 1909, p.12
[208] TNA, RAIL 411/499, Salaried staff register No. 2, p.559; *South Western Gazette*, December 1899, p.9
[209] *South Western Gazette*, May 1888, p.11
[210] TNA, RG 9/1396, 1861 Census, Devon, Exeter Holy Trinity, District 17, p.9

available clerks when vacancies occurred. Nonetheless, it cannot be assumed that Snow, Haddow and Avery, despite coming from outside the industry, were more likely to be innovators compared to their colleagues. All had had close contact with the LSWR before being employed by it and their understanding of railway operations had possibly been thus conditioned. Furthermore, before being appointed to senior management positions they served the LSWR for twelve, ten and nine years respectively. Consequently, they had considerable time to be inducted into the company's management practices.

As the LSWR's management structures settled in the 1860s, the company's labour markets were deliberately narrowed. In 1863 a board special committee altered the rules regarding clerical appointments, ordering that 'all vacancies for senior clerks be filled up from the junior clerks list,' and specifying that individuals could only be appointed directly to senior positions if no suitable junior was available.[211] Consequently, after 1880 most new senior traffic managers had begun their LSWR careers as juniors. Table 1 shows that in the 1880s only one out of seven new senior traffic managers had joined the railway in a junior position. But closer scrutiny shows that only two of the seven had joined above the age of eighteen, and it is thus considered that their time as junior clerks was not mentioned in their staff records.[212] Of the fourteen senior traffic managers appointed in the 1890s (all of whom joined the company after 1863) ten began their careers in junior positions; while between 1900 and 1911 ten of the thirteen new managers had also begun as junior clerks or lads.

Senior traffic managers appointed after 1880 increasingly spent all their working lives as clerks in the Traffic Department, probably meaning that as a group the diversity of their employment experiences narrowed over time. While considerable knowledge of an organisation's practices is important when reforming outdated routines, it is possible that towards the end of the period LSWR traffic managers' conservative outlooks on railway management became more pronounced and their capacity to innovate diminished.

Conclusion

In sum, the Traffic Department's clerical promotional ladders between 1870 and 1911 meant that once clerks reached senior management positions in the department their views on railway

[211] TNA, RAIL 411/218, Special committee Minute Book, Memo by Frederick Clark and Archibald Scott, 13 April 1863, p.54
[212] TNA, RAIL 411/492, Clerical staff character book No. 2, p.759; TNA, RAIL 411/499, Salaried staff register No. 2, p.724

management had only been shaped by their experience of practice within it. Thus, traffic managers' opinions on railway management were conservative in nature and they had little capacity to innovate. These factors had important ramifications for the LSWR's management quality and financial performance, as Section 3.4 discusses.

3.3. Managers' career lengths

Decade of appointment to first senior management post	Average number of years between appointment and first senior management post	Average age individuals reached their first management post	Sample Size
1858-1869	14.81	37.06	16
1870-1879	16.25	36.27	12*
1880-1889	26.86	43.71	7
1890-1899	25.86	41.86	14
1900-1911	30.08	45.15	13
1858-1911	22.15	40.51	62

Table 4: The average time managers took to reach their first senior management post and their age when they reached it, sorted by the decade in which they were appointed. *One manager's starting age was unavailable. Source: Staff Records, *South Western Gazette,*

The traditionalism and lack of innovation amongst the LSWR senior traffic managers after 1870 was also encouraged by the fact that as the decades passed the time it took for individuals to reach their first senior management post lengthened. Thus, new traffic managers were progressively more likely to have been socialised within the Traffic Department's established operating practices, and possibly found it hard to think outside what they knew. Table 4 shows that between 1858 and 1869 it took managers on average about fifteen years from joining the company to being appointed to their first management position. However, between the 1870s and early-1900s this time grew, and by the period 1900 to 1911 the average duration was thirty years.

This increase can be attributed, firstly, to the board's 1863 ruling that except in exceptional circumstances all new clerical appointees should be juniors. Thereafter, all future traffic managers joined the LSWR as teenagers, meaning the time it took them to reach management was longer than those individuals who had previously been appointed as full clerks at later points in their lives.[213] Secondly, the number of opportunities for clerks to advance up the hierarchy

[213] TNA, RAIL 411/218, Special committee Minute Book, Memo by Frederick Clark and Archibald Scott, 13 April 1863, p.54

progressively shrunk between 1870 and 1911. Between 1884 and 1914 the Traffic Department's clerical staff increased from 805 to 1,505; while the last chapter discussed how the number of districts, and consequently influential senior traffic management positions, shrunk over this period.[214] Therefore, as promotional opportunities decreased, clerks would have stayed in more junior posts for longer. Consequently, this possibly impeded skilled and innovative employees moving into influential positions within the Traffic Department; and in 1909 one clerk wrote to the *South Western Gazette* that 'a great deal of talent is being wasted by our young people for want of opportunity…'[215]

Sam Fay's LSWR career usefully demonstrates how from the 1880s the rate at which talented and innovative individuals entered senior traffic management positions slowed. Fay, who was arguably one of the most talented railway managers of his generation, joined the company as a Junior Clerk at Itchen Abbas Station in 1872. He was advanced quickly and after only twelve years was moved to the Traffic Superintendent's office. Despite being appointed its Chief Clerk in 1885, his career then stalled. In consideration of other managers' career paths, logically his next promotion would have been into a District Superintendent's post. Yet, the next such vacancy only became available in March 1896 when Adkins, the Central District Superintendent, resigned.[216] Thus blocked, in 1891 Fay 'came to a deadlock' over his promotion with his immediate superior, Verrinder, and he appealed directly to Scotter, who advanced his career by giving him the position of Assistant Storekeeper. Fay was then seconded to the struggling Midland and South Western Junction Railway (MSWJR) as General Manager in 1893,[217] and after skilfully removing the company from chancery, became the LSWR's Superintendent of the Line in 1899.[218] He occupied this post for only a short time, becoming the GCR's General Manager in 1902.[219]

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[214] HCPP, Board of Trade, (242) Railways (number of persons employed). Return of the number of persons employed by each of the railway companies of the United Kingdom on 31 March 1884 (classified according to the nature of the work performed by them); &c., 1884, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1884-060841 (12 December 2011); HCPP, Board of Trade, (470) Railway companies (staff and wages). Return "showing the average weekly number of staff employed and the average weekly amount of salaries and wages paid to such staff by the several railway companies of the United Kingdom during the year 1913 in each of the following departments, viz.: way and works; working stock maintenance: (a) locomotive, (b) carriage and waggon; operating and traffic: (a) locomotive, (b) traffic --(1) superintendence, (2) station masters and clerks, (3) signalmen and gatemen, (4) ticket collectors, policemen, porters, &c., (5) guards, (6) collection and delivery of parcels and goods; general (secretary, general manager, accountant, and clerks.)" 1914, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1914-017594 (12 December 2011)

[215] *South Western Gazette*, July 1909, p.5

[216] TNA, RAIL 411/492, 492, Clerical staff character book No. 2, p.1

[217] George Dow, *Great Central – Volume 3: Fay Sets the Pace*, *1900-1922*, (Shepperton, 1965), p,27-28

[218] TNA, RAIL 411/492, 492, Clerical staff character book No. 2, p,711

[219] *Great Central Railway Journal*, July 1906, p.3

Few clerks were of Fay's potential. Nevertheless, the lack of opportunity that hindered him rising into a senior traffic management position in the LSWR suggests the company may have lost the ideas and skills of others who had much to offer it between 1870 and 1911. It is, therefore, realistic to suggest that this inability to bring on talented managers was detrimental to the Traffic Department's management quality for reasons outlined above. Indeed, as Chapter 2 showed, because the turnover of senior managers was low, the thinking on railway management of those already high in the department would tend towards conservatism, meaning operational practices potentially stagnated and became inefficient.

3.4. Traffic managers' careers and management quality

Chapter 2 argued that within the LSWR – where authority was centralised – officials could potentially occupy positions of authority for decades with considerable freedom to manage their affairs as they saw fit and, thus, their thinking on railway management could become conservative over time, meaning established operational practices were infrequently reassessed. However, as this section has shown, this tendency was unlikely to be countered by the company's senior traffic managers.

The evidence strongly suggests that between 1870 and 1911 the LSWR's senior traffic managers were largely ignorant of management practices in other railways or industries, and their views on railway operation and administration were highly conditioned by their work within the company. For instance, Scott had complete charge of the Traffic Department since 1852; yet by the 1870s and early-1880s how he was running it was obsolete compared with management practices in the wider British railway industry. The company's traffic managers and clerks – the future traffic managers – were, however, seemingly unaware of this fact, as many *Gazette* articles indicate.[220] Indeed, when Scotter joined the LSWR from the MSLR in 1885 and completely reformed the department's operation and administration, Fay described the managerial practices he introduced as being 'revolutionary,' despite them being found throughout the industry (see Chapters 4 and 5).[221]

This limited experience of alternative operating practices also meant traffic managers had little scope to critically assess their departmental heads' quality. As Chapter 2 discussed, managers lower in the Traffic Department's hierarchy were not in a position to put pressure on decision-

[220] WFC, Sam Fay Diary, various entries; *South Western Gazette*, 1 December 1884, p.4
[221] *Great Central Railway Journal*, July 1905, p.3

makers above them to reassess or improve the quality of the departmental management. This atmosphere of deference was unhelpful; but if this had been absent, it is unlikely that subordinates possessed much idea of what was 'good' or 'bad' about existing practices.

The ways in which senior traffic managers' careers affected the LSWR's management quality were most apparent between 1890 and 1911. After 1890 almost all newly appointed senior traffic managers had spent their entire careers within the LSWR, had taken considerable time reaching senior management posts, and talented individuals were being held back by insufficient promotional opportunities. Therefore, despite Scotter transforming the company's management after 1885, limited competence and knowledge below him meant that in the 1890s no one within the Traffic Department pressured him to regularly reassess the operational practices he had established. The Traffic Department's management practices stagnated and developed inefficiencies as a result. Indicative of this stagnation, when after 1900 the LSWR's profitability came under pressure from rising costs, government legislation and competition from trams, senior traffic officials found some economies which thereto had been unrealised (see Chapter 5 and 6).

Furthermore, contrasts in the Traffic Department's management quality after 1900 highlight how LSWR traffic managers' rigid and introverted careers affected the company's financial performance between 1870 and 1911 when they reached positions that had decision-making authority. In 1899 Sam Fay was appointed Superintendent of the Line. He initiated many far-sighted and innovative projects – some of which were inspired by railroad management in the United States – to improve the Traffic Department's operational practices and cost position. Yet, when Fay left the company in 1902, Owens, the General Manager, and Holmes, the new Superintendent of the Line, did not progress with many of his ideas and further innovations were not investigated. Furthermore, their attempts to improve the company's cost position cannot be realistically called innovative as they simply adapted existing operating practices. Consequently, the company's financial performance did not improve. Fay, however, went on to significantly reform the GCR's management and better its very poor financial situation (see Chapter 6).[222]

Fay was clearly a far more astute and innovative railway manager than Owens and Holmes. Apart from his natural talents, what stood him apart from them was that he had worked outside the LSWR as the MSWJR's General Manager (and Secretary) between 1892 and 1899, whereas they

[222] Andrew Dow, 'Great Central Railway,' in Jack Simmons and Gordon Biddle, (eds.), *The Oxford Companion to British Railway History*, (Oxford, 1997), pp.188-190

had spent all of their careers within its Traffic Department's rigid and introvert clerical promotional ladder. Fay therefore had a broader range of management experiences, was not so committed to the LSWR's existing operating practices, and had more capacity to think creatively. Conversely, as Owens and Holmes' only experience of railway administration was from within the LSWR, they found it difficult to innovate and think imaginatively about improving many of its established management practices.

Overall, this section has demonstrated that senior traffic managers' narrow career paths negatively influenced the LSWR's operating performance between 1870 and 1911. Traffic managers had limited knowledge of railways' practices outside the company, became overly familiar with those within it, and, thus, had limited their capacity to innovate or critically appraise the virtue of established management practices. Consequently, these findings suggest one reason why, as this thesis argues throughout, innovation in management technique from within the LSWR was largely absent over this period. Furthermore, it can also be considered that, perhaps, LSWR traffic managers' careers put greater restrictions on their ability to innovate than it did on other companies' managers. Indeed, as has been discussed and later chapters show, it was principally senior managers appointed from outside the company that advanced and modernised the Traffic Department's operating practices. This could tentatively suggest that other companies' traffic managers, for example Scotter, were provided with careers that had a broader range of working experiences and gave them greater scope to think creatively. Although, without comparative case studies this remains conjecture.

Section 2 – LSWR directors' external business interests

This section explores how LSWR directors' external business interests – if they had any – may have influenced the company's policies and strategies between 1870 and 1911. Ultimately, this section attempts to achieve what Chapter 1 stated Channon and Hughes' studies did not in the case of the GWR and LNER: to suggest how a railway company's performance was influenced by its directors' interlocking directorships and primary occupations.[223]

Chapter 1 discussed the numerous ways directors' external activities possibly affected railways' management quality. It is likely similar considerations applied in the LSWR's case. For example, directors possibly used their positions to influence the railway's decision-making processes in favour of their businesses or wider economic networks. They also possibly took up positions on

[223] Channon, *Railways in Britain and the United States*, p.192; Hughes, 'The Board of Directors of the London & North Eastern Railway,' p.175

other companies' boards to allow them to influence their policies and strategies in ways that favoured the LSWR. All these possible links between directors' external business activities and the company's policies will be considered.

However, most importantly, this section's findings suggest that between 1870 and 1911 LSWR directors' external business interests rarely gave them the capacity to introduce to the railway management practices that may have enhanced its operational effectiveness. Furthermore, because most directors probably learned about railway operation from within the LSWR, this limited their capacity to adequately critique senior managers' actions. Combined these factors also likely contributed to the lack of advancement or innovation in operational and managerial practices from within the company in this period.

3.5. Directors' external business interests 1870-1880

Determining LSWR directors' external business interests before 1880 has been challenging, because it was only then that the *Directory of Directors* (DofD), which listed the directors of public companies,[224] began publication. However, other sources have provided this information.[225]

Occupation	1870	1875	1880
Military	1	0	0
	16.67%	8.33%	8.33%
Land and Agriculture	4	5	6
	33.33%	41.67%	50.00%
Manufacturing and Industry	1	1	0
	8.33%	8.33%	0.00%
Commerce and Finance	2	2	2
	16.67%	16.67%	16.67%
Legal	3	3	3
	25.00%	25.00%	25.00%
Unknown	1	1	1
	8.33%	8.33%	8.33%
Total	**12**	**12**	**12**

Table 5: Primary occupations of LSWR directors 1870-1880 (August). Source: Obituaries, Who's Who, *South Western Gazette*, Dictionary of National Biography

[224] Channon, *Railways in Britain and the United States,* p.187

[225] In the following sections, the dates in brackets next to individuals' names denote the period they were on the company's board.

Between 1870 and 1880 individuals whose primary occupations were in land and agriculture dominated the LSWR's board. Table 5 shows that of the company's twelve directors, four such individuals were on the board in 1870 (twenty-five percent), five in 1875 (forty-two percent) and six in 1880 (fifty percent). Channon argued that in the GWR's case individuals working in law were also likely to have had aristocratic or landed parentage. Consequently, the three LSWR directors in this profession in each year also possibly possessed landed backgrounds. Lastly, Lieutenant-Colonel Laurd (1854-1871), a retired career soldier, also had a landed background. [226] Overall, the maximum number of LSWR directors who possibly had connections to land and agriculture was eight in 1870 and 1875 (sixty-seven percent) and nine in 1880 (seventy-five percent).

Why landed men dominated the LSWR's board in such large numbers between 1870 and 1880 is unclear without further evidence. Possibly they joined because the company principally served agricultural districts and they saw the opportunity to increase their estates' business through influencing its commercial policies. Yet, there is little evidence company policy was directed towards serving their interests, as Chapters 4 to 6 demonstrate. Perhaps, as Channon argued in the GWR's case, falling capital land values during the agricultural depression meant many landowners' capacity to service their debts declined, and, as such, a diversification of their portfolios was deemed by them to be a sensible course of action.[227]

Most likely is the possibility the board looked to recruit landed individuals because of their connections within the territory the company served. In 1875 Arthur Guest, a prospective (and future) director who came from a landed background, sent circulars to LSWR shareholders urging them to elect him to the board. He claimed his credentials for the post were his experience with railway matters while he was a Member of Parliament (M.P.), his thirty-year residence in the West Country and his relationships with many LSWR stockholders.[228] Between 1870 and 1880 the LSWR was purchasing many of the companies it already leased and worked (see Chapter 4), as well as expanding into the West Country. Thus, by recruiting directors who had regional links, like Guest's, this may have made negotiations easier for the board and the final agreements more favourable.

[226] *The Graphic*, Saturday, 27 November 1875, p.517-518
[227] Channon, *Railways in Britain and the United States,* p.205-213
[228] Author's Collection, 'To the proprietors of the London and South Western Railway – Election of Director', 6 October 1875

It has been largely impossible to demonstrate exactly how directors external interests impacted on the LSWR's strategies and policies between 1870 and 1880, or if they brought knowledge of innovative, alternative and new management practices to the company. Thus, only impressionistic conclusions can be drawn. Firstly, given most landed directors were unlikely to have possessed experience of running industrial organisations of the railway's scale, it is doubtful they brought any valuable knowledge or experience to its management. Only two had relevant business interests or experience. Wyndham Spencer Portal (1861-1901) owned Laverstoke Paper Mills and, therefore, had some familiarity with running an industrial business;[229] while Laurd had received administrative responsibilities when in the army in India, demonstrating that he possessed knowledge of managing large bodies of men.[230] Indeed, Gourvish showed how Captain Mark Huish similarly transferred administrative skills he learnt in the army to the management of three railways: the Glasgow, Paisley and Greenock Railway between 1837 and 1841, the Grand Junction Railway between 1841 and 1846, and the LNWR between 1846 and 1858.[231]

It is conceivable that the external activities of non-landed directors' positively impacted on the LSWR's business. Three directors, Govett (1878-1905), James Mangles (1876-1884) and Mortimer (1851-1891) worked in finance (in Mangles' case as a secondary activity). Therefore, the LSWR's case mirrors the GWR's where Channon showed that until 1896 only a small proportion of its directors worked in this economic sector.[232] Nonetheless, these directors may have permitted the LSWR access to capital on favourable terms. They also may have brought to the railway management skills given that banks were some of the first joint-stock companies to develop, as Wilson and Thomson argued, 'effective bureaucratic structures,' 'robust internal labour markets,' and a 'tightly controlled, hierarchical employment regime.'[233]

Other directors also potentially transferred knowledge of running industrial businesses to the LSWR. Hutchins (1854-1875) was chairman of the Rhymney Iron Works from 1851[234] and Charles Edward Mangles (1854-1873) was the Royal Mail Steam Packet Company's chairman. Additionally, Mangles likely provided the LSWR with connections in the shipping industry, helping the railway to increase the trade through the south coast docks and ports it served, principally

[229] *South Western Gazette*, 1 June 1895, p.8
[230] *The Graphic*, Saturday, 27 November 1875, p.517-518
[231] Gourvish, *Mark Huish and the London & North Western Railway*
[232] Channon, *Railways in Britain and the United States*, p.184
[233] Wilson and Thomson, *The Making of Modern Management*, p.71
[234] *South Western Gazette*, December 1891, p.8; *Journal of the Society of Arts*, 15 March 1861, p.267; James Fraser, Illustrated history of the Loyal Cambrian Lodge 1810-1914 (Merthyr Tydfil, 1914), p.67-68

Southampton.[235] These directors therefore had the most potential to positively contribute to the LSWR's business between 1870 and 1880. Indeed, this is possibly why Mangles was the company's chairman between 1859 and 1872, while Hutchins became deputy between 1872 and 1874.[236]

Overall, the evidence suggests that most LSWR directors between 1870 and 1880 brought no valuable knowledge or experience of industrial management to the company. The likelihood is, therefore, that they learnt about railway organization through sitting on the LSWR's board and had little capacity to analyse or challenge senior officials' views and actions effectively. The ramifications of this situation for the LSWR's managerial and financial performance are discussed in section 2.9 and later chapters.

3.6. Directors' external business interests 1880-1911

This section develops the argument that LSWR directors' external activities may have affected the company's management quality between 1880 and 1911. These are better understood after 1880 because of availability of the DofD. This source is used in a new way here. When Channon used it to investigate the GWR directors' external directorships up to 1930, he failed to distinguish between the directorships individuals had on joining the board and those they acquired thereafter.[237] My study makes this distinction and highlights other useful information the DofD provides about LSWR directors' activities. Initially, I analyse how many external directorships directors held and how this possibly influenced the extent of their engagement with the company's affairs. Following this, I show in which economic sectors LSWR directors' held directorships before and after joining the board. This enables me to examine how directors' external business interests possibly influenced, or were influenced by, the company's policies, strategic aims and profitability between 1880 and 1911.

The LSWR board in 1880

Firstly, to link the last section's findings on LSWR directors' external business interests with that extracted from the DofD, Table 6 compares both sets of information for 1880. This comparison reinforces the last section's conclusions. In 1880 six landed directors had no directorships beyond the railway. Two other directors, one in legal and one in stockbroking professions, also had no

[235] *Hampshire Telegraph and Sussex Chronicle etc.*, Wednesday 5 November, 1873
[236] TNA, RAIL 1110/281 and 283, LSWR half-yearly reports and accounts 1870-1880, various pages
[237] Channon, *Railways in Britain and the United States,* p.187-191

other activities apart from the LSWR. This supports the claim that before 1880 most LSWR directors held no external directorships, and again highlights that between 1852 and 1880 directors were probably not recruited to the board because of their external business interests.

Director	Primary Occupations	External Directorships
Beach M.P, William Wither Branstom	Landed	None
Campbell, Lt-Col. Henry Walter	Landed	None
Dutton, Ralph Heneage. (Chairman)	Landed	None
Eyre, Count John Lewis	Landed	None
Gaselee, Serjeant	Legal	London and Provincial Law Assurance Society
Guest, Arthur Edward.	Landed	None
Govett, Adolphus Frederick	Banker	Whitby, Redcar and Middlesbrough Railway Co.
Johnston, Captain James Gilbert	Unknown	South Indian Railway Company, Southampton Dock Company, West London Extension Railway
Mangles, James Henry	Legal	None
Mortimer, Charles Smith	Stockbroker	None
Portal, Wyndham Spencer (D. Chairman)	Landowner (Paper Maker)	None
Snell, William Phillip	Legal	West London Extension Railway

Table 6: Directors' primary occupations and external directorships in 1880, Source: *Directory of Directors* and various others

Only three directors, Gaselee (1852-1880), Govett (1878-1906) and Johnston (1853-1897) had directorships with companies that were not physically, financially or organisationally related to the LSWR's business. These were the London and Provincial Law Assurance Society; the Whitby, Redcar and Middlesbrough Railway (WRMR) and the South Indian Railway Company. Arguably, the LSWR's management quality benefited from Govett and Johnston's experience of other railways' practices. Yet it should be noted that, the WRMR, a small railway in the North East, was poorly managed, took ten years to build between 1871 and 1881, had defective infrastructure when opened and was loss-making.[238] It is therefore inconceivable that Govett brought any valuable insights on railway management from this company to the LSWR.

Contrastingly, two directors were on the boards of companies that were directly related to the LSWR's business. Johnston and Snell were directors of the West London Extension Railway. This

[238] Michael Aufrere Williams, *A more spectacular example of a loss-making branch would be hard to find': A financial history of the Whitby-Loftus line 1871-1958,* (Unpublished MA Thesis. University of York, 2010), p.25-50

was jointly owned by the LSWR and consequently such positions were presumably considered part of these directors' duties. Johnston was also on the Southampton Dock Company's (SDC) board, which fed goods and passenger traffic onto the LSWR. Johnston was presumably and usefully able to provide the LSWR board with information on the SDC's policies, as well as conveyed to that company the LSWR directors' opinions.

Overall, this evidence reinforces the conclusion that between 1870 and 1880 most LSWR directors had few business interests outside the company, and that most learned about railway management from within it. Therefore, they lacked the knowledge and experience to critically assess senior officials' opinions and actions. But also, they likely had little capacity to bring from their external business interests ideas that that might help improve the railway's operating practices.

3.8. The nature of LSWR directorships in 1880-1911

Number on Joining	1880-1884	1885-1889	1890-1894	1895-1899	1900-1904	1905-1909	1910-1911	Total	%
0	1	1	1	1	5	1	1	11	55%
1	1			1				3	15%
2-3			1	1			1	2	10%
4-6					2		1	3	15%
7-8								0	0%
9-12						1		1	5%
Total	2	1	2	3	7	2	3	20	100%

Table 7: The number of directorships LSWR directors had on joining the company. Source: *Directory of Directors*

The DofD allows analysis of the LSWR directors' external business activities between 1880 and 1911. Examining the economic sectors directors represented could suggest why they were recruited to the board, their motivations for taking up directorships once on it, and, therefore, the concerns and interests of the directorate at different points. Furthermore, examining LSWR directors' interlocking directorships' possibly reveals their value to rejuvenating and improving the company's management quality and financial performance

Firstly, the possible reasons individuals were recruited to the LSWR's board will be examined. Table 7 shows that eleven of the twenty individuals who joined the board between 1880 and 1911 had no other directorships on appointment. Some of these directors were appointed because of their already close links with the company. Scott, Scotter[239] and Macaulay (ex-

[239] *South Western Gazette*, January 1911, p.8-9

secretary)[240] were all former LSWR senior managers and were presumably selected because their long experience of the railway's management may have been useful. Yet, as will be shown, by the 1900s Scotter and Macaulay had been with the LSWR for considerable periods (Macaulay had joined it in 1850[241]), and like many of its decision-makers their opinions and outlooks on railway management were narrow. Their presence on the board therefore reinforced similar views held by influential traffic managers (see Section 1), meaning that after Fay's departure in 1902 – a period when the company's profitability was depressed by external factors – there were few individuals who had the experience or knowledge to challenge established operational practices or innovate effectively.

Three other directors were seemingly appointed because of familial ties. Barrington-Simeon (1892-1907) was the son-in-law of the late chairman, Dutton; [242] William Wyndham Portal (1902-1922) was the son of Wyndham Portal, who had served between 1872 and 1901;[243] while James Mangles (1876-1884)[244] joined the board three years after his father, Charles (1854-1873), had left it.[245] There was, therefore, also a dynastic element to the appointment of LSWR directors between 1870 and 1911, although it is unclear whether this had an impact on the company's management quality.

Five directors, who have no other directorships listed in the DofD, were landed. These were Clinton (1907-1922), Crichton (1903-1922), Drummond (1899-1922),[246] Leigh-Bennett (1900-1903) and Marshall (1880-1900). Given that four of these individuals were recruited in the 1900s, it suggests that up to 1911 having local knowledge and close social and economic connections within the LSWR's territory were still considered valuable traits. In Drummond's case, for example, *The South Western Gazette* argued that 'his appointment to the board was a well-merited one insomuch as his social and business connections in Exeter and the surrounding districts…should contribute to the interests of the company.'[247] Nevertheless, without further evidence it is unclear how these directors' regional connections benefited the company's business.

[240] *South Western Gazette*, 1 November 1898, p.8
[241] TNA, RAIL 411/492, Clerical staff character book No. 2, p.397
[242] *South Western Gazette*, 1 June 1909, p.4
[243] *South Western Gazette*, 1 June 1903, p.9
[244] *South Western Gazette*, 1 September 1884, p.3
[245] *Hampshire Telegraph and Sussex Chronicle*, Wednesday, 5 November 1873
[246] However, the evidence also suggests that Drummond was a partner in a bank around this time. *The Times,* 2 August 1924, p.15; *South Western Railway Magazine*, July 1922
[247] *South Western Gazette*, September 1900, p.9

Actual No. Of Directorships	1880-1884	1885-1889	1890-1894	1895-1899	1900-1904	1905-1909	1910-1911	Total
Manufacturing and Industry					1	2	2	4
Publishing and Misc				2				2
Commerce, Banking and Finance			3		6	2	3	14
Communications and Utilities					1	1		1
Railways (home and abroad)	1			1				2
Shipping						7	2	9
Docks								0
Total	1	0	3	3	6	12	7	32

Table 8: Sectors in which new directors held directorships. Source: *Directory of Directors*

Lastly, one individual who joined the board, while possessing no other directorships, seemingly did so for what would now be labelled public relations purposes. When Arthur Fraser Walter (1901-1910) was appointed in 1901 he was 'chief proprietor' of *The Times.*[248] In the late 1890s the LSWR's train services had received much bad publicity and criticism in the national press (see Chapter 6). It is therefore conceivable that Walter was recruited as a means to improve the company's image, both in *The Times* and through his links in the newspaper industry. Yet, without more evidence this is speculation.

Nine directors appointed between 1880 and 1911 sat on other companies' boards when they joined the LSWR, and some were possibly recruited because these positions had the potential to benefit the railway's business. Table 8 shows the number of positions new directors held in different economic sectors.

Between 1870 and 1900 just four individuals who joined the LSWR's directorate were already serving on other companies' boards. Only one director's interlocking directorship potentially had considerable benefit for the railway's management quality. Arthur Mills (1881-1898) was a North Staffordshire Railway (NSR) director. He possibly brought to the LSWR knowledge and experience of management practice in the wider British railway industry. Even then, he only joined the Traffic Committee for six years in the 1890s, meaning that for much of his tenure he was not in a position where he could criticise the operational practices used in the Traffic Department. Also the next section demonstrates that he was very inactive in the company's affairs generally. Therefore, it is unlikely his presence on the LSWR's board was of much benefit to its management quality. Additionally, Michael Williams, who joined the LSWR for one year in 1899, was a director of the Newquay Baths and Sanitary Steam Laundry Company and the Hotel Victoria (Newquay),

[248] Colin Seymour-Ure, 'Walter, Arthur Fraser (1849-1910)', *Dictionary of National Biography,* http://www.oxforddnb.com/view/article/56805

two businesses the LSWR would have had little interest in, except, perhaps, insomuch as they represented the growing traffic to the West Country for leisure.

Principally, both men were appointed because of their connections within the regions the LSWR served. Mills had been M.P. for Exeter before joining the company and was well connected in the district;[249] while the *South Western Gazette* stated that Williams had 'influence with the business community' and knowledge of the trade around his three homes in Morfa, Newquay and Plymouth.[250] This evidence therefore reaffirms the suggestion that between 1870 and 1911 new directors were predominantly appointed because of their potentially beneficial contacts within the company's territory.

Only one director appointed before 1900 had an existing directorship that may have directly benefitted the LSWR's business. Robert Williams (1892-1922) held three directorships in commerce, banking and finance, one of which was on the Williams Deacon and Manchester and Salford Bank's board. This owned the Williams Deacon Bank, the LSWR's banker.[251] When the LSWR took over the Southampton Docks in 1892, which required heavy investment, the directors presumably deemed it sensible for the company's bank to be represented on the board to ease access to capital.

After 1900 the LSWR's directorial hiring policies were altered. As stated, in this period the railway's profitability came under pressure from numerous factors: its traffic stagnated, material and fuel costs grew, and capital was in short supply. Consequently, the company recruited more directors whose business connections potentially could have benefited it. Like in the GWR's case, the LSWR recruited directors who held positions in commerce and finance. These were Cecil (1902-1922), Grant (1900-1912), Martin-Holland (1910-1922), Pirrie (1907-1922), and Philips (1910-1922); of which Grant, Martin-Holland and Pirrie held positions on banks' boards. As Channon suggested occurred in the GWR's case, at a time when interest in railways' securities declined, limiting the LSWR's access to finance,[252] strong links to financial institutions possibly

[249] *South Western Gazette*, August 1881, p.5
[250] *South Western Gazette*, May 1899, p.9
[251] TNA, ZPER 73/1, Railway Diary and Officials Directory for 1883; TNA, ZPER 73/1, Railway yearbook for 1897
[252] *Hull Daily Mail*, Friday 26 July 1901; *Lincolnshire Chronicle*, Friday 11 May 1900; *Manchester Courier and Lancashire General Advertiser*, Wednesday 01 January 1902; unknown author, 'English Railway Prospects', *The Saturday Review*, (4 August 1900), p.139-140; TNA, RAIL 411/28, Court of Directors Minute Book, 10 October 1901, p.129; TNA, RAIL 411/221, Special committee on Capital Expenditure, 15 March 1904, p.390; Irving, 'British Railway Investment and Innovation, 1900-1914' *Business History*, p.39

allowed access to capital on more favourable terms.[253] Indeed, these links may have allowed it to sustain investment in numerous long-term capital projects it had initiated between 1897 and 1901, and purchase the Waterloo and City Railway (WCR) in 1906 (see Chapter 6).

The LSWR had purchased Southampton Docks in 1892, and unsurprisingly the two directors, William Pirrie and Owen Philips, held seven and two positions in shipping when they were appointed. These contacts likely helped the LSWR augment its seaborne trade, offsetting a stall in traffic growth in the period and the fall in its average revenue per ton of merchandise hauled before 1900 (see Chapter 6). Pirrie and Philips were directors of shipping lines that sailed from the Southampton Docks. Philips was the Royal Mail Steam Packet Company's Managing Director and Pirrie was a director of the Oceanic Steam Navigation Company (White Star Line [WSL]). Their positions on the LSWR board would have allowed informal communication and a cohesive relationship to exist between these shipping lines and the railway – improving the management performance of both. [254] The two directors would have also provided the railway with extensive expertise on steamship and dock management; shortly after appointment Pirrie joined the Docks and Marine committee.[255] This quickly paid off for the LSWR. Soon after Pirrie's appointment in May 1907, the WSL moved its operation to Southampton. Subsequently, he influenced the LSWR's policies, and in October 1907 work began at Southampton on what became the 'White Star' dock. This was constructed to berth the WSL's new ships, *Titanic* and *Olympic*, which were being built in Belfast by Harland and Wolff, of which Pirrie was also chairman.[256] Pirrie's LSWR directorship therefore allowed him to influence the railway's policies to benefit his other business interests, but not to the detriment of the railway's performance. It should be noted the evidence suggests that no other directors used their position on the LSWR board to influence company policy in favour of their external business interests between 1870 and 1911.

Overall, this section has argued that the majority of individuals recruited to the LSWR's board between 1880 and 1911 were so because their social and economic connections outside the company had the potential to benefit it somehow. Directors were appointed because of their contacts in the LSWR's territory or the shipping industry; because they could provide the company with access to capital on favourable terms; or even because they could give the railway good publicity.

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[253] Channon, *Railways in Britain and the United States*, p.191 and p.168
[254] *Railway Magazine*, April 1909, p.403
[255] *South Western Magazine*, June 1918, p.80
[256] *Railway Magazine*, March 1909, p.297; Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.144

Importantly, this section has demonstrated how few new directors could have transferred to the company knowledge of management practices used outside it. Indeed, even Mills' position on the NSR's board was of doubtful benefit to the LSWR; while the three ex-LSWR railwaymen appointed to the board – Scott, Scotter and Macaulay – lacked the scope to bring new and innovative ideas to the company given they had worked within it for decades and had few external business interests. Indeed, as discussed, after 1900 their appointments may have actually harmed the company's ability to find efficiencies and effect productivity gains.

Post-appointment directorships

However, LSWR directors also acquired external directorships once on the board. This section suggests how these positions possibly reflected the directorate's concerns and objectives between 1880 and 1911, and possibly improved the company's business. Table 9 shows the economic sectors in which LSWR directors took up positions after appointment.

The evidence confirms Channon's argument that before about 1900 there existed for railway directors few directorial opportunities beyond the railway industry. Indeed, in this period LSWR board members acquired no fewer than twenty-eight directorships in other railways (seventy-two percent). Eight of these were in companies that the LSWR had no links to whatsoever (including overseas railways). Yet, twenty-eight directorships were taken up in companies the railway had a direct financial, trading or physical interest in. Channon argued that GWR directors used such positions within companies to exert influence over their policies.[257] The same likely applied in the LSWR's case. Eight of the twenty-eight directorships were within two railways the LSWR jointly owned, the Somerset and Dorset (SDR) and West London Extension Railways (WLER). Consequently, sitting on these companies' boards was presumably part of directors' duties. Realistically these are the only interlocking directorships that directors acquired after 1880 that potentially allowed them to transfer knowledge to the LSWR that may have improved its management quality. On the SDR's board LSWR directors worked with directors from the Midland Railway, while the WLER's board was also made up of directors from the LNWR, GWR and LBSCR. By having working relationships with these individuals, LSWR board members possibly acquired information on innovations and advancements in operational practice in the wider British railway industry that could have been be applied to the company's operations, yet without further evidence it is unclear whether this knowledge transfer took place.

[257] Channon, *Railways in Britain and the United States*, p.188

	1880-1884	1885-1889	1890-1894	1895-1899	Before 1900	1900-1904	1905-1909	1910-1911	After 1900	Total
Manufacturing and Industry		1			1	1	1	1	3	**4**
Food, Drink and Tobacco		1			1			1	1	**2**
Publishing and Misc.					0				0	**0**
Commerce, Banking and Finance		1		1	2	3	3	5	11	**13**
Communications and Utilities					0			0	0	**0**
Railways (Not Associated with the LSWR)	3	2	2	1	8				0	**8**
Railways (Associated with LSWR)	4	2	4	10	20	7		1	8	**28**
Shipping		1			1			5	5	**6**
Docks (all associated with the LSWR)	1	5		1	7	3	1		4	**11**
Total	**8**	**13**	**6**	**13**	**40**	**14**	**5**	**14**	**32**	**72**

Table 9: Directorships LSWR directors were appointed to after joining the board. No individual serving the LSWR in a management position is known to have taken up an interlocking directorship between 1870 and 1911. Source: *Directory of Directors*. N.B. this does not take into account the length of directors' tenures

Directors also acquired eighteen directorships within independent companies the LSWR had a direct business interest in. For example, when in 1885 it loaned the SDC £250,000 to construct a new dock, four of its directors received positions on the SDC's board, which allowed them to steer its policies.[258] Furthermore, nine of the twelve companies LSWR directors took positions in, including the SDC, were eventually purchased by the railway. Therefore, by taking up these positions the directors could possibly gather strategically useful information on the companies, build stronger relationships with them, influence their policies, and improve the terms on which they were purchased. These directorships probably benefitted the LSWR's financial performance between 1870 and 1911; although, the extent to which they did cannot be precisely determined without further information.

After 1900, LSWR directors still acquired positions in railways and docks directly associated with its business. In total these accounted for twelve of the thirty-two directorships they took up.

[258] TNA, RAIL 411/221, Special committee Minute Book, 28 October 1885

However, the need for such connections was decreasing. By the 1900s the LSWR had absorbed most of the companies it had a direct financial, physical or trading interest in, and, consequently, such directorships were acquired less frequently. Given the company undertaking numerous major infrastructure projects, and in light of the difficulties it was having raising capital, the directors pursued a policy of obtaining directorships on financial institutions' boards. Indeed, eleven positions were taken up in banking, commerce and finance after 1904, and it is possibly no coincidence that this was the year in which the LSWR board formed a special committee to address its capital supply problems.[259] As stated, such links may have permitted the railway to sustain investment in its major capital projects and purchase the WCR in 1906 (see Chapter 6).

Lastly, Pirrie and Philips acquired further directorships on one and four shipping lines respectively. Presumably they continued to expand their interests in this economic sector for personal gain. Nonetheless, these new positions would have provided the LSWR with further links in the shipping industry that possibly helped augment its trade at Southampton.

2.9. Conclusion

This section has highlighted how LSWR directors' external business activities potentially impacted on the company's management quality and financial performance between 1870 and 1911. Firstly, most directors were appointed because of their contacts within the territory the company served, rather than their business interests; however, it is unknown how these connections directly influenced company policy or benefited the business. Furthermore, especially before 1900, LSWR directors also acquired directorships on the boards of companies that fed the railway's business and trade, quite possibly with a view to influencing their policies, gathering information on their activities, or eventually taking them over. Indeed, on many occasions LSWR directors successfully exerted their influence over such companies, as was so in the case of the Southampton Dock Company.

Through its directors the LSWR also established links after 1900 with financial institutions and the shipping industry to address specific problems. In a period when capital supplies were poor, the positions directors held within financial institutions possibly gave the company access to capital on favourable terms. Additionally, despite the company's rail-borne trade stagnating, Pirrie and Philips' positions and contacts within the shipping industry potentially contributed to growing the

[259] TNA, RAIL 411/221, Special committee on Capital Expenditure, 15 March 1904, p.390

trade at the Southampton Docks. Therefore, these external directorships potentially had positive effects on the LSWR's business.

This section's findings are important for another reason. Throughout this thesis it is argued that a major weakness of the LSWR's management between 1870 and 1911 was its functional department structure. Within this highly centralised system of corporate governance decision-makers, particularly senior managers, frequently occupied their posts for decades, with little restricting how they managed their affairs. This consequently meant that there was a potential for their views on railway management to stagnate, for established operational practices to be reassessed infrequently, and for inefficiencies to develop; all of which harmed the company's performance (see Chapter 2).

However, this section has suggested the directors' outside business interests did not, for the most part, facilitate any movement of new or innovative management concepts from external sources into the company. Most directors, particularly when joining the board, were not involved in businesses that were similar in terms of their size, their use of technology or the sectors of the economy they were operating in, to the LSWR. Indeed, the majority of directors throughout the period had their primary business interests in land and agriculture. Consequently, as Chapters 4 to 6 suggest, the vast majority of the company's directors learned about running a railway from within the LSWR and, as such, had little basis upon which to criticise or challenge senior decision-makers' opinions, actions or policy suggestions, which led to poor management practices developing within the company.

The most notable example that demonstrates this is the directors' attitudes to the competing management philosophies of Scott, the General Manager, and Adams, the Locomotive Superintendent, between 1881 and 1884. The former had been in charge of the company's Traffic Department since 1852. But after 1870 the practices he was using in the department became progressively unsuitable for managing the company's increasing traffic and working complexity. This was the root cause of the company's poor profitability before 1884. However, the directors allowed this situation to develop. Their external business interests did not give them experience how railways were managed outside the company, and, consequently, they had no knowledge base upon which to challenge Scott's operational practices. But when Adams joined the LSWR in 1878, after having gained experience of how other British railways were managed, he used this knowledge to challenged Scott's backward methods where their responsibilities overlapped (operational and rolling stock policies). This was, therefore, the first

time the directorate had ever been alerted to the weaknesses in Scott's management. Confronted with the company's overall financial performance deteriorating further, and given Adams had considerably improved the Locomotive Department's management, they increasingly favoured his opinions on matters of policy over Scott's.

As this and other cases in Chapters 4 to 6 demonstrate, the LSWR's management quality and financial performance between 1870 and 1911 was therefore not shaped by knowledge or experience of industrial organization being brought to the company by directors. Thus, this section's findings propose another reason why, as the thesis argues throughout, in this period the advancement, improvement or innovation in railway management from within the company was minimal.

Section 3 – The LSWR's 'activist' directors

As Chapter 2 highlighted, and is a central argument of this thesis, how effectively department heads' activities were coordinated and overseen was an important influence on the LSWR's management quality between 1870 and 1911. This section is therefore important; by determining which directors were most active in the LSWR's business in the period, it can be ascertained when the board as a whole was taking on these responsibilities. Additionally, it can be also determined when it was most in charge of the company's overall strategic direction. Ultimately, this section shows how directors' activism, or lack thereof, influenced company's financial performance between 1870 and 1911.

Establishing which board members were most engaged in the business has not been simple as the dry minute books do not give much sense of who most influenced discussions and decision-making. As a substitute, I have analysed which directors were most active in four areas of the board's business. As the Traffic Committee played such an important role in the company's strategy and policy (see Chapter 2) its membership was a priority for analysis. Secondly, I established which individuals sat on the various Special committees of the board; directors formed these to handle significant policy issues which needed detailed investigation. Thirdly, the LSWR's chairmen and deputy chairman have been noted. Finally, the directors active in inter-company diplomacy have also been determined; their role was clearly an important one that would not have been left to directors who were unfamiliar with the LSWR's objectives and policies. By collating this information, a list has been produced of the directors that were probably the most active in the LSWR business between 1870 and 1911. These individuals will hereafter be called 'activists'.

3.10. Traffic Committee membership

As Chapter 2 discussed, the Traffic Committee was the LSWR's most important board committee as it made decisions regarding infrastructure investment, additions to rolling stock, staff matters, timetables and operational policy. Consequently, the directors who joined it had considerable influence over how the LSWR's strategies and policies were developed.

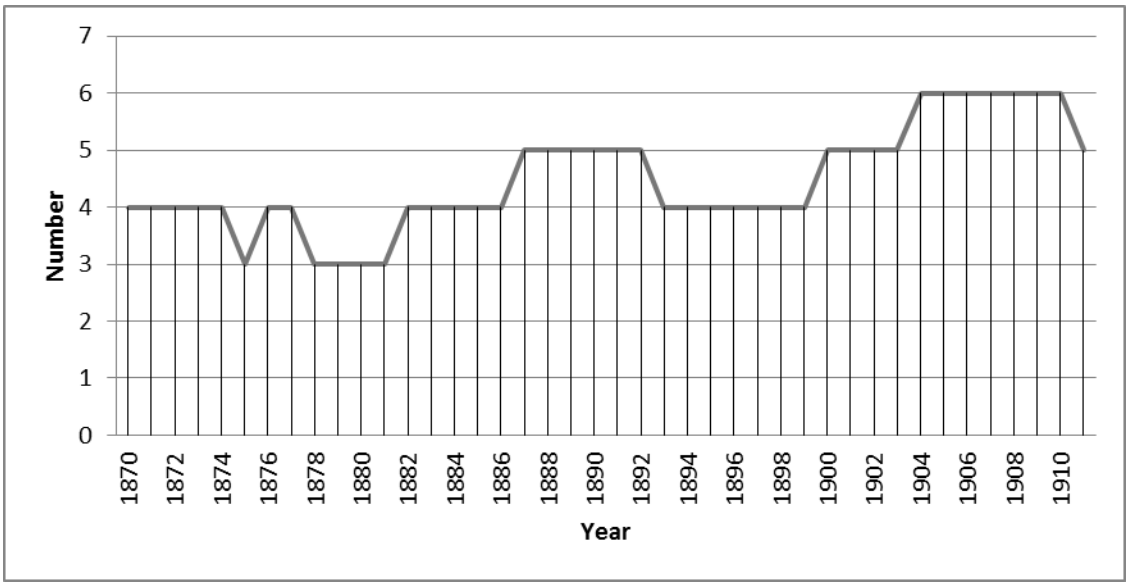

Figure 1: The number of directors that sat on the LSWR's Traffic Committee 1870-1911. Source, TNA, RAIL 411/239-269, Traffic Committee minute books

From 1870 to 1911 the number of directors that sat on the Traffic Committee at any one time varied between three and six, as Figure 1 shows, with twenty-one different directors filling these positions across the period (Appendix, Table 1.1.). It is considered that of these twenty-one directors those who were members of the committee for considerable portions of their directorships were the most engaged with LSWR's business. On this basis, eight directors (Campbell, Crichton, Dummond, Dutton Marshall, Mortimer, Scotter and Walter), who served the Traffic Committee for more than seventy-five percent of the years they were on the board, can be considered potential 'activists'. Another candidate was Beach, who, despite only sitting on the committee for fifty-nine percent of the years he was a LSWR director, was on it for the lengthy period of sixteen years.

3.11. Diplomatic functions

Directors' activism was also possibly indicated by their involvement in diplomacy for the company. This has been determined by analysing the LSWR's representation on the following boards and committees between 1870 and 1911:

- The Somerset and Dorset Joint Railway Board (S&DJR): The LSWR jointly owned this with the Midland Railway between 1875 and 1923.[260]
- The West London Extension Railway (WLER): The LSWR owned one sixth of the company for the entire period studied.
- The London Brighton and South Coast Railway (LBSCR) Joint Committee: The two companies discussed intercompany issues at this committee between 1870 and 1922.[261]
- The GWR consultation committee: This sat between 1877 and 1882, with one meeting in 1906. The companies' officials discussed the same issues as on the LBSCR joint committee. [262]
- The Railway Clearing House (RCH) Committee: The LSWR erratically sent one delegate to this committee throughout the period.[263]

To determine the most active board members in this field, I have calculated the average number of diplomatic positions they held in each year of their directorships. This is their 'diplomatic engagement score.' I calculated this by totalling the number of years they were in each diplomatic position and then divided this figure by the number of years they were LSWR directors. For instance, Henry Walter Campbell's 'diplomatic engagement score' was calculated as follows:

Committee or Board	**Duration (years)**	
Somerset & Dorset Railway Board	1894-1909	16
West London Extension Railway Board	1898	1
LB&SCR Joint Committee	1872-1910	39
GWR Joint Committee	1881-1882 & 1906	3
Railway Clearing House Committee	1872-1904	33
Total 'years' performing diplomatic functions		**92 (a)**
Duration of LSWR Directorship	1872-1910	39 (b)
Diplomatic Engagement Score		**2.36 (a ÷ b)**

Table 10: Example of how a diplomatic engagement score is calculated, Source: See Appendix 1.2

Twenty-four LSWR directors in Table 1.2 (Appendix 1) undertook diplomatic functions for the company between 1870 and 1911. Five of these, Campbell, Dutton, Mortimer, Grant and Scotter, can be definitely considered as potential 'activists' given their diplomatic engagement scores were greater than one. One director, Wyndham S. Portal, performed three diplomatic roles and, despite his score being less than one, he is considered a potential an 'activist' given his high level of activity.

[260] TNA, RAIL 626/1/2/3/4/5/6, Somerset and Dorset Joint Line Committee, 1870-1910; Robin Athill, *The Somerset and Dorset Railway*, (Newton Abbott, 1980), p.58-61

[261] TNA, RAIL 414/196/197/198, Tooting Merton and Wimbledon railway: copy minutes of proprietors and directors of that company, and of meetings of Joint Committee (LBSC and LSW companies) for management of the line, 1870-1922

[262] TNA RAIL 240/5, Great Western and London and South Western Railways Joint Committee, Committee of Consultation, 1877-1906

[263] TNA, RAIL 1080/6/7/8/9/10/11, Railway Clearing House Committee Minutes, 1870-1910

3.12. Special committee membership

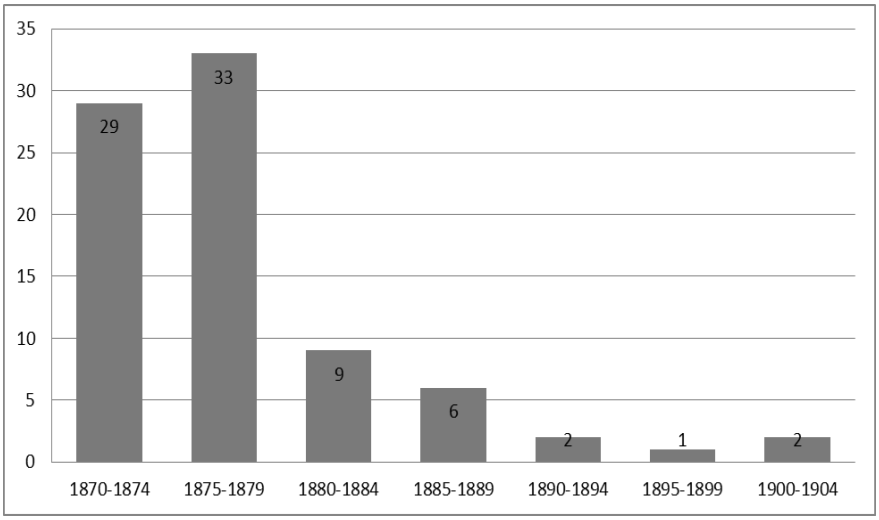

Figure 2: The number of Special Committees held by the LSWR board, 1870-1911. Source: TNA, RAIL 411/220 and RAIL 411/221, Special committee Minute Books

The third area where LSWR directors possibly demonstrated their level of engagement with the company's affairs was their service on Special committees. The board established these to discuss and resolve significant issues of policy and strategy, and, therefore, the directors that sat on them were important in shaping the company's strategic course.[264] Eighty-two Special committees were formed between 1870 and 1904 (Figure 2), which were twenty-one directors attended (Table 1.3, Appendix 1).

I consider that directors who joined a high proportion of committees during their directorships were most likely the 'activists'. This approach is problematic. In each decade after 1870 the number of Special committees declined, which reflected the board's progressive withdrawal from the company's day-to-day management (see Chapter 4). Therefore, in the 1870s active directors may have joined many committees, but as the number formed was considerable, they attended a small proportion of them. Conversely, after 1880 directors who were not highly active in the company's affairs could have attended a high proportion of committees given the number held in this period was much lower. Yet, the changing nature of Special committees must also be considered. After about 1880 they were only established to address significant issues, for instance the Southampton Docks' purchase.[265] Therefore, directors attending them in this period were likely taking leading roles in corporate decision-making and strategy formation.

[264]TNA, RAIL 411/216-221, Special committee Minute Books, 1849 to 1904
[265]TNA, RAIL 411/221, Special committee Minute Books,

The directors who attended the highest proportion of Special Committees held throughout their directorships were Scotter (100 percent), Scott (seventy-eight percent) and Macaulay (sixty-seven percent). They can therefore be considered potential 'activists'. Four directors joined above fifty percent of the special committees available to them and were also highly active in the company's affairs: Campbell (sixty-five percent), Portal (sixty-one percent), Mortimer (fifty-two percent) and Drummond (fifty percent). Drummond, however, only attended one of the two Special committees formed during his directorship. Yet, given Special committees after 1890 discussed very important issues, he too is considered a probable 'activist.'

Other directors were on many Special committees, but because they joined most before 1880, when committee numbers were high, they only attended a low proportion of those formed during their directorships. Dutton attended thirty (forty-seven percent), Gaselee joined twenty-one (forty percent) and Snell was present at twenty (thirty percent). These directors were, therefore, considerably active in the company's affairs and can also be considered potential 'activists'.

3.13. The activist directors and the board's role

Combining this evidence with information on who became the LSWR's chairmen and deputy chairmen, Table 1.4 (Appendix 1) shows the fifteen individuals I consider were the company's most active directors between 1870 and 1911. However, my analysis of LSWR directors' activism between 1870 and 1911 has been more detailed than previous works. Unlike Channon, who in his study of the Midland Railway's London extension simply divided its directors into 'activists' and 'backwoodsmen', I have been able to classify the LSWR's board members as 'higher', 'significant' and 'lesser' activists.[266]

Eight directors – labelled 'higher' activists – Campbell, Castleman, Drummond, Dutton, Charles Mangles, Mortimer, Portal and Scotter, engaged the most with the company's business between 1870 and 1911. All were involved in the three areas of board activity analysed, and only one, Mortimer, never became company chairman or deputy chairman. As Chapters 4 to 6 show, these individuals were significant in formulating and developing the LSWR's strategies and policies in the period. These directors were supported by three others, Beach, Gaselee and James Mangles, who are considered 'significant activists.' None of them became chairman or deputy chairman, but to varying degrees they were active in the areas of board activity analysed. Lastly, four

[266] Channon, *Railways in Britain and the United States*, p.99

directors, Johnson, Macaulay, Scott and Snell, have been classified as 'lesser activists'. None joined the Traffic Committee, but all engaged in diplomacy for the company or sat on Special committees.

The directorate – as Chapter 4 shows – had the most influence over the LSWR's investment strategies in the 1870s, but also retained charge of supervising and overseeing the activities of the company's departments. Indeed, despite being re-titled 'General Manager' in 1870,[267] Scott did not possess these responsibilities and was still the Traffic Department's head. Unsurprisingly, therefore, eleven of the fifteen directors considered 'activists' served in this decade: Beach, Campbell, Castleman, Dutton, Gaselee, Johnston, Charles Mangles, James Mangles, Mortimer, Wyndham S. Portal and Snell.

The board was particularly active in this period for two reasons. Firstly, eight of these directors are known to have had few activities outside the LSWR, and consequently they had time to dedicate to the railway's business. Secondly, there was a low turnover of directors between the 1850s and 1870s. In 1870 nine board members had joined the company between before 1854 (Snell, Johnson, Dutton, Mortimer, Hutchins, Gaselee, Castleman, Eyre and Charles Mangles) –in 1878 six of these men still remained on the board).[268] In the 1850s the directorate was almost certainly closely involved in managing the smaller and less complex LSWR. Indicative of this, while there were fifty-one Special Committees held in the 1870s, between 1852 and 1862 the figure was eighty-five.[269] Thus, by the 1870s the board retained many men who expected to take a dominant role in company policy and operations. Exemplifying this, in 1879 Gaselee – a long-standing 'activist' director who had been deeply engaged in the company's affairs since the1850s[270] – unsuccessfully suggested the committees be abolished and the entire board oversee all its functions as a means, presumably, of reducing company costs.[271]

In the 1870s the board's hold over overseeing and coordinating the LSWR's functions was injurious to the company performance. As its traffic and operational complexity grew the board,

[267] *Salisbury and Winchester Journal*, Saturday December 17, p.8
[268] Various biographical sources, TNA, RAIL 411/281 and RAIL 411/283, LSWR reports and accounts, 1850-1884
[269] TNA, RAIL 411/214-221, Special committee Minute Books
[270] Williams, *The London and South Western Railway, Volume 1,* p.75 and p.217; TNA, RAIL 411/216, Special committee Minute Book, Working Expenses, 1855; TNA, RAIL 411/216, Special committee Minute Book, Special committee on the State of the company's traffic, 1857, p.226; TNA, RAIL 411/221, Special committee Minute Book, 6 May 1875, Special committee on the company's receipts and expenses, p.55; TNA, RAIL 411/6, Court of Directors Minute Book, Minute 1557, 7 August 1879
[271] TNA, RAIL 411/6, Court of Directors Minute Book, Minute 1276, 9 January 1879

which only met fortnightly, was progressively unable to manage the railway's operational affairs as effectively as it had been. Consequently, senior managers lacked effective leadership; resulting in the company failing to develop coherent operational strategies and the functionally independent department heads having the freedom to act in ways that damaged corporate profitability. This state of affairs significantly contributed to the LSWR's inefficiency and poor financial performance between 1870 and 1880 (see Chapter 4). As such, this case supports the thesis' central argument – discussed at length in Chapter 2 – that the quality of leadership, oversight and coordination department heads received significantly influenced the LSWR's performance between 1870 and 1911.

Between the 1878 and mid-1890s the board's 'activist' directors fell in number, and by 1895 six were present, of which only two were 'higher activists': Campbell and Wyndham S. Portal. Three factors caused this change (see Chapters 4 and 5). Firstly, by the early-1880s the directors realised they were unable oversee the day-to-day running of the concern effectively, and consequently delegated responsibility for this to Scott. Furthermore, many directors who joined the company in the late-1870s and early-1880s started obtaining external directorships, as shown above, and as such they had less time to dedicate to the railway's management. Finally, Scotter, the company's General Manager from 1885, considerably improved the company's efficiency and profitability. Thus, the directors, who had learned about railway management from within the company (see section 2), increasingly trusted him to determine the LSWR's capital investment and operational policies. These factors meant that by the mid-1890s the directorate's influence over the company's management and strategic direction had waned considerably, as reflected by the smaller number of 'activist' directors on the board (See Chapter 5).

Nevertheless, around 1900 the dynamics of directors' activism again changed. For a short period the number of 'activists' on the LSWR board rose to eight because Scotter and Macaulay joined it (Macaulay was the company's secretary between 1880 and 1898[272]). With the support of numerous long-standing active directors, as well as Scott and Macaulay, Scotter strengthened his control of the company's strategic direction, and continued to pursue the policies that he had established as General Manager of expanding the concern and improving its services. Indeed, the company began work on numerous major capital projects after 1898, such as the rebuilding of Waterloo, the expansion of the Southampton Docks, the widening of the main lines and the removal of the locomotive works to Eastleigh (see chapter 6).

[272] *South Western Gazette*, 1 November 1898, p.8

Between 1897 and 1904 eight directors joined the board that had, or eventually obtained, considerable external business interests, as Section 2 discussed. Because most of these individuals could not dedicate their time to the company, between 1902 and 1911 only four 'activist' directors were on the board, three of which were 'higher activists' (Campbell, Drummond, Scotter and Macaulay). The oversight and direction of the company's business was, therefore, largely left to them.

This was problematic for the company's management performance after 1900. This thesis' other major argument is that because only those at the head of the organisation had decision-making authority and could sit in position for decades with few constraints on their autonomy, potentially their thinking on railway management stagnated and established operational practices' worth were infrequently reassessed. This argument applies in the case of the LSWR's 'activist' directors after 1900. As three of the four of them had been influential within the company since the 1880s (Scotter, Macaulay and Campbell), and since that time had not worked outside it, their views on railway management – most notably Scotter's – had by the 1900s stagnated and become conservative in nature. Coupled with similar views on railway administration being held by the company's senior traffic managers (see Section 1), this meant that after Sam Fay's departure from the company in 1902, it did not effectively tackle the problem of its profitability coming under pressure from external sources. Indeed, led by Scotter, the company did not persist with innovations Fay had initiated, did not reassess fully existing operational practices and, most notably, after 1905 delayed the electrification of its suburban lines to win back traffic that had been lost to the trams.

Section 4 – Conclusion

As this thesis will argue throughout, from within the LSWR between 1870 and 1911 there was very little original or innovative thinking on railway management or operating practice. This Chapter has demonstrated some of the factors that underpinned this state of affairs. It has revealed that the backgrounds and careers of LSWR decision-makers made it more likely that their views on management practice would be narrow and they would in many cases uncritically accept the company's established and embedded operating practices.

Section 1 showed that apart from Sam Fay, all the LSWR's senior traffic managers between 1870 and 1911 (including Owens, the General Manager between 1898 and 1911) had spent their entire careers within the Traffic Department's rigidly hierarchical and introverted promotional trees.

Thus, when they reached senior management level they only knew of the department's existing operating practices, limiting their ability to analyse their value, think creatively, or even accept new innovations. Additionally, Section 2 demonstrated that most LSWR directors would have learnt about railway management from within the company, as they had few external business interests. Consequently, as later chapters show, this situation was injurious to the company's financial performance as it limited their ability to critically assess senior officials' actions or the value of the company's embedded management practices. Indeed, few, if any directors had scope to bring to the LSWR knowledge of management practices used outside the company, that may have improved those within it. Finally, after 1900 the LSWR's most active directors had been with the company for decades, either as board members or senior managers, and consequently they too had developed traditional outlooks on railway management, which reinforced similar views held by most senior traffic managers and the General Manager (see Chapter 6). In sum, between 1870 and 1911 the careers and lives of the LSWR's directors and managers underpinned the slow pace of development or advancement in operating and management practices within the company in this period. This meant, as this thesis has suggested throughout, the primary way the railway's operating practices advanced in this period was through individuals being appointed to senior management positions from external sources.

The thesis' second major argument is that the occasions when the LSWR's overall management quality was at its best was when the company's functionally independent department heads were provided with strong leadership by those above them in the hierarchy and, consequently, their actions were synchronised and supervised effectively. Firstly, Section 3 argued that in the 1870s the board had close oversight of the department heads' activities for two reasons: they had few external business activities, and so could commit themselves to the business, and they had been with the company for decades and expected to take a leading role in its operational management. But this situation was problematic for the company's operational cohesiveness and, ultimately, its financial performance, as Chapter 4 shows. Because of the company's increasing operational complexity after 1870, the directorate was progressively unable to closely oversee the activities of the department heads effectively. Furthermore, the directors had little experience of industrial or railway organisation outside the LSWR, and thus they had no basis upon to which to critique department heads' policy suggestions or activities. Consequently, these two factors combined meant the company never established coherent operational strategies, and the poor management of the Traffic and Locomotive Departments by their heads went unchecked, harming company efficiency and profitability.

Overall, this chapter described how LSWR directors' and senior traffic managers' lives, careers and business interests potentially influenced the company's strategies, policies and financial performance between 1870 and 1911. In the detailed discussion on the company's policies, strategies and management quality in the next three chapters, I will expand on the arguments made in this chapter and the last.

Section 5 – Appendices

3.1. All LSWR directors that sat on the Traffic Committee 1870-1911 (taken at the start of the year). Source, TNA, RAIL 411/239-269, Traffic Committee minute books

No.	Name	Decade				Years on Traffic Committee 1870-1911	Years a Board Membership 1870-1911	Proportion of years a Director on Traffic Committee
		1870s	1880s	1890s	1900-11			
1	Marshall, Lt- Gen Frederick		8	10	1	19	**19**	100.00%
2	Mortimer, Charles Smith	10	10	2		22	**22**	100.00%
3	Drummond, Hugh Williams				12	12	**13**	92.31%
4	Dutton, Ralph H.	9	8	3		20	**23**	86.96%
5	Scotter, Sir Charles				11	11	**13**	84.62%
6	Walter, Arthur Fraser				8	8	**10**	80.00%
7	Crichton A.D.C, Col the Hon H.G.L.				7	7	**9**	77.78%
8	Campbell, Lt-Col. H.W.	2	9	10	9	30	**39**	76.92%
9	Leigh-Bennett, Henry Curry				3	3	**4**	75.00%
10	Cecil M.P., Evelyn				8	8	**11**	72.73%
11	Castleman, Charles	5				5	**7**	71.43%
12	Beach M.P, W.W.B		4	10	2	16	**27**	59.26%
13	Gaselee, Serjeant	7				7	**12**	58.33%
14	Williams, Michael			1		1	**2**	50.00%
15	Philips, Owen				1	1	**2**	50.00%
16	Mills, Arthur			6		6	**18**	33.33%
17	Mangles, Captain Charles Edward	1				1	**4**	25.00%
18	Mangles, James Henry		2			2	**9**	22.22%
19	Portal, William W.				1	1	**11**	9.09%
20	Portal, Wyndham S.	2				2	**32**	6.25%
21	Guest, Arthur E.	1				1	**23**	4.35%
No. of Directors in each Decade		**8**	**6**	**7**	**12**			

3.2. Joint committees, part-owned companies and bodies LSWR directors sat on 1870-1911, Source: TNA, RAIL 414/198 and RAIL 414/200, LSWR and London, Brighton and South Coast Joint committee Minute Books; TNA RAIL 240/5, Great Western and LSWR Committee of Consultation Minute Books; TNA, RAIL 626/1 to RAIL 626/5, Somerset and Dorset Joint Railway Board Minute Books; TNA, RAIL 732/2 to RAIL 732/6, West London Extension Railway Board Minute Books; TNA, RAIL 1080/6 to RAIL 1080/11, Railway Clearing House Committee Minute Books.

Director	Start	End	Committee & Companies					Total Diplomatic Years	Years on the Board 1870-1911	Diplomatic Engagement Score
			Somerset & Dorset	West London Extension	LB&SCR Joint Committee	GWR Joint Committee	RCH			
Campbell, Lt-Col. H.W.	1872	1910	1894-1909	1898	1872-1910	1881-1882 -1906	1872-1904	92	39	**2.36**
Mangles, James Henry	1876	1884	1875-1884			1877-1882		16	9	**1.78**
Dutton, Ralph H.	1854	1892	1878-1892		1870-1873, 1878-1891	1877-1882		39	23	**1.7**
Mortimer, Charles Smith	1852	1891			1874-1891	1877-1882		24	22	**1.09**
Scotter, Sir Charles	1898	1910	1900-1908		1907-1910	1906		14	13	**1.08**
Grant, William	1901	1912		1902-1910	1907-1910			13	13	**1**
Johnston, Captain James Gilbert	1853	1897		1870-1896				27	28	**0.96**
Portal, Wyndham S.	1872	1902	1875-1892		1893-1898	1878-1882		29	32	**0.91**
Snell, William Phillip	1855	1900		1870-1897				28	31	**0.9**

Table 3.3. All directors who served on a LSWR Special committee 1870-1904, Source: TNA, RAIL 411/220 and RAIL 411/221, Special committee Minute Books

Name	Start Year	End Year	No. Attended	No. Held During Tenure	Proportion Attended
Scotter, Sir Charles	1898	1910	3	3	100.00%
Scott, Archibald	1885	1902	7	9	77.78%
Macaulay, Frederic Julius	1898	1911	2	3	66.67%
Campbell, Lt-Col. H.W.	1872	1910	41	63	65.08%
Portal, Wyndham S.	1871	1902	37	61	60.66%
Mortimer, Charles Smith	1852	1891	34	65	52.31%
Drummond, Hugh Williams	1899	1922	1	2	50.00%
Dutton, Ralph H.	1854	1892	30	64	46.88%
Mangles, James Henry	1876	1884	12	26	46.15%
Govett, A.F.	1878	1907	12	28	42.86%
Gaselee, Serjeant	1852	1881	21	52	40.38%
Mangles, Captain Charles Edward	1854	1873	5	13	38.46%
Guest, Arthur E.	1876	1898	10	28	35.71%
Castleman, Charles	1855	1875	12	40	30.00%
Snell, William Phillip	1855	1900	20	67	29.85%
Johnston, Captain James Gilbert	1853	1897	19	66	28.79%
Marshall, Lt- Gen Frederick	1880	1900	4	15	26.67%
Barrington-Simeon, Sir John Stephen	1892	1907	1	4	25.00%
Hutchins, Edward J.	1854	1878	8	32	25.00%
Bury, Viscount	1865	1878	4	41	9.76%
Beach M.P, W.W.B	1875	1901	3	35	8.57%
Mills, Arthur	1881	1898	1	14	7.14%

Table 3.4. All LSWR directors 1870-1911 identified as 'activists'.

Category	Name	Board Tenure	Years on Board 1870 - 1911	% of the period 1870 - 1911 on the board	Chairman	Deputy Chairman	Traffic Committee	Diplomacy Engagement	Special committee Attendance
Higher Activists	Campbell, Lt-Col. H.W.	1872-1911	39	92.86%	1899-1903	1893-1898	76.92%	2.36	65.08%
	Castleman, Charles	1855-1875	6	14.29%	1873-1874	1859-1872	71.43%	0.57	30.00%
	Drummond, Hugh Williams	1900-1922	12	28.57%	1911-1922	1904-1910	92.31%	0.69	50.00%
	Dutton, Ralph H.	1854-1892	23	54.76%	1875-1892	-	86.96%	1.7	46.88%
	Mangles, Charles Edward	1854-1873	4	9.52%	1859-1873	-	25.00%	0.5	38.46%
	Mortimer, Charles Smith	1852-1891	22	52.38%	-	-	100.00%	1.09	52.31%
	Portal, Wyndham S.	1872-1901	30	71.43%	1892-1899	1875-1892	6.25%	0.91	60.66%
	Scotter, Sir Charles	1898-1910	13	30.95%	1904-1910	1899-1903	84.62%	1.09	100.00%
Significant Activists	Beach M.P, W.W.B	1876-1901	26	61.90%	-	-	59.29%	0.63	8.57%
	Gaselee, Serjeant	1852-1880	11	26.19%	-	-	58.33%	0.38	40.38%
	Mangles, James Henry	1875-1884	9	21.43%	-	-	22.22%	1.78	46.15%
Lesser Activists	Johnston, Captain James Gilbert	1853-1897	28	66.67%	-	-	-	0.96	28.79%
	Macaulay, Frederic Julius	1898-1912	15	35.71%	-	-	-	0.79	66.67%
	Scott, Archibald	1885-1902	18	42.86%	-	-	-	0.22	77.78%
	Snell, William Phillip	1855-1900	31	73.81%	-	-	-	0.9	29.85%

Chapter 4 – Company policy during Archibald Scott's tenure: 1870-1884

This chapter assesses the LSWR's financial performance during Archibald Scott's General Managership between 1870 and 1884. The LSWR was a below financial average performer amongst the fifteen major British railway companies in this period (see Chapter 1). Its OR increased from 50.11 in 1870, to 55.60 percent in 1877 and to 59.01 percent in 1884; approximately seven percent above the fifteen largest railway companies' average. Additionally, the company's ROCS decreased from 4.97 to 4.61 percent between 1872 and 1887 (five year moving average), with its rank in this respect falling from tenth to eleventh. This chapter explains what caused these results. The chapter's first two sections argue that the company's profitability was depressed by weakly performing lines being added to its network, increases in wages and growing high-volume, low-margin third class passenger traffic.

The chapter's main argument is, however, that between 1870 and 1884 the LSWR was beset by severe managerial weaknesses that reduced its profitability. Through describing these problems the chapter develops the thesis' principal arguments. As previous chapters argued, decision-making authority within the company's functional department structure was highly centralised. Therefore, senior officials, particularly department heads, could potentially occupy senior posts for decades, with little challenge of their authority within their fiefdoms, causing their thinking on railway management to stagnate. Thus, the worth of established practices were, possibly, infrequently assessed, which meant inefficiencies developed within them that harmed the company's financial performance. This chapter demonstrates this was so in the LSWR's case before 1884. The General Manager, Scott, had been the Traffic Department's head since 1852. He had complete authority in the department, and with almost no criticism of his activities from any source, which included the company's senior traffic managers, he did not adapt operating practices he had established before 1870 to the LSWR's increasing traffic and operational complexity thereafter. The consequent inefficiencies in the company's train operations were the primary cause of the LSWR's poor profitability between 1870 and 1884.

The last two chapters also contended that the lack of development in operational practices within the LSWR between 1870 and 1911 was principally mitigated by individuals being appointed to senior management positions who had worked outside the company. This chapter develops this argument. In 1878 William Adams joined the company as Locomotive

Superintendent. He reformed the Locomotive Department's poor management, but also challenged, with limited success, the company's established and inefficient operational practices.

Another major argument of the thesis is that because departments were functionally separated within the LSWR's structure, its management quality was considerably dependent on how effectively the department heads' actions were coordinated and overseen by those above them in the hierarchy. This chapter supports this argument. The LSWR's board between 1870 and 1881, and then Scott until 1884, were unable to get department heads working together and could not critique their policies effectively. Indeed, particularly after 1881, because Adams and Scott's philosophies of railway management were out of alignment, they came into conflict over policy and, because the directors increasingly favoured the formers' views on policy, but the latter still had authority in the Traffic Department, the company never developed a coherent strategy to bring down its excessive operating costs.

Overall, this chapter argues that operating weaknesses chiefly caused the LSWR's poor financial performance between 1870 and 1884.

Section 1 – Major Capital Expense

4.1. Capital Expenditure

Firstly, I analyse the LSWR's considerable network expansion between 1870 and 1884. The directorate – who had charge of such decisions in the period (see Chapter 3) – expended £3,200,492 on purchasing fifteen lines the company leased and worked (thirty-three percent of the total capital expended in the period), in addition to spending £1,363,476 on network extensions (fourteen percent). Furthermore, in 1876 the company jointly leased the Somerset and Dorset Railway (SDR) with the Midland Railway; this line required considerable investment to modernise its operations and infrastructure.[273]

This chapter's first part discusses the directors' objectives when formulating these investment decisions and how they influenced the company's profitability. Case studies will demonstrate that between 1870 and 1884 lines were built or purchased to defend the company's territory, profits and potentially unrealised profits. This investment activity was broadly in line with those

[273] TNA, RAIL 1110/281 and 283, LSWR Reports and Accounts 1870-1884

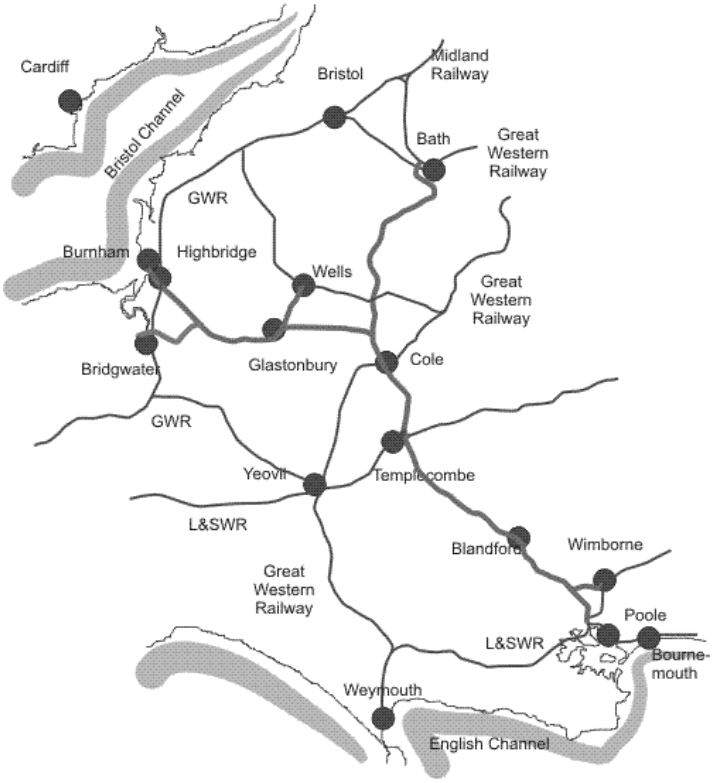

Figure 1: The Somerset and Dorset Railway in 1890 (in bold); Source: 'Afterbrunel', File S7d 1890.gif, *Wikipedia*, http://en.wikipedia.org/wiki/File:S%26d_1890.gif, 23 July 2007

of several other major companies at the time, for example the LCDR and SER.[274] However, many lines the LSWR acquired and built gave poorer returns than older parts of its network. Like in many nineteenth-century railway companies, decision-making was weak.[275] Without much pressure on directors to critique in detail the quality of the decisions they were making, they engaged in minimal project appraisal and no information was available to them on alternative courses of action that may have led to superior outcomes for company profitability. Furthermore, the company never developed cogent investment strategies that may have guided directors' decisions, and most were taken in an unplanned and *ad hoc* manner. Directors' did instinctively and correctly believe that the new lines the company built and acquired would not be as remunerative as established parts of its network. However, they overrode these instincts, preferring to defend the company's territory. The directors were not attempting to maximise the company's profits.

4.2. Motivations behind extensions

To examine directors' decisions to extend the LSWR's network between 1870 and 1884, three case studies are used: the company's joint lease with the Midland Railway of the Somerset and Dorset Railway (SDR) in 1876; the 'new' Guildford line's construction between 1882 and 1885; and the West Country extensions in the 1870s. I assess directors' immediate motivations for investing in these lines, the lines' impact on the company's financial performance, and the beliefs that underpinned directors' thinking when making the decisions.

[274] Gourvish, 'The Performance of British Railway Management after 1860', p.198; Hodgkins, *The Second Railway King*, p.639

[275] Pollins, *Britain's Railways: an Industrial History*, p.68; Gourvish, *Railways and the British Economy*, p.44; Channon, *Railways in Britain and the United States, 1830-1940*, p.107

Somerset and Dorset Railway lease

In 1875 the SDR's line was strategically important to the GWR, LSWR and Midland Railway. In the north it connected with the GWR at Burnham and Bath, where it also linked with the Midland; while in the south it crossed the LSWR's main line at Templecombe and connected with it at Wimborne near Bournemouth (Figure 1). Therefore, if any of these companies gained control of the line, they could dominate traffic travelling between the north, Wales, and the south coast, and potentially tap a lucrative source of revenue.

After opening a line to Bath in 1874, and despite considerable trade with the Midland and GWR at that place, the SDR was in financial trouble because of the high cost of servicing the loans it had funded the extension with. Consequently, its directors approached the GWR to offer the company for purchase. The GWR directors subsequently consulted their Bristol and Exeter Railway (BER) allies, and both companies agreed to take the line if the terms were acceptable.[276]

Such a move would have angered the LSWR directors. Since the 1850s both they and the GWR had been in line-building competition for regional dominance in the West Country.[277] On the 12 August 1875 Grierson and Wall, the GWR and BER's respective General Managers, visited Waterloo to inform Scott of their plans and offer the LSWR a working agreement south of Templecombe to maintain peaceful relations.[278] Scott expressed his alarm as irrespective of what was being offered the GWR would still possess territorial dominance in the region and control of the north-south trade.[279] He requested another meeting with them on the 16 August, saying he needed time to consult his board.[280]

Scott met the LSWR board on 13 August, who immediately sent him to Birmingham to confer with the Midland's directors and propose that the two companies jointly lease the SDR.[281] Yet, at his meeting on the 16th Scott did not inform Grierson and Wall of these negotiations,[282] and stated that a half-yearly meeting had prevented the LSWR board from considering the matter.

[276] Williams, *The London and South Western Railway, Volume 2*, p.173
[277] Jack Simmons, 'South Western v. Great Western: Railway Competition in Devon and Cornwall', *Journal of Transport History*, 1st Series, 4, (1959), p.15-20
[278] TNA, RAIL 1066/1692, Sir D. Gooch to the Hon. R.H. Dutton Bart. 26 August 1875, p.44
[279] TNA, RAIL 1066/1692, Wyndham S. Portal. To Sir D. Gooch, 4 September 1875, p.46
[280] TNA, RAIL 1066/1692, Sir D. Gooch to the Hon. R.H. Dutton Bart. 26 August 1875, p.44
[281] TNA, RAIL 1066/1692, Archibald Scott's evidence for Somerset and Dorset Railway Bill, Minute No. 418, p.55, 24 March 1876
[282] TNA, RAIL 1066/1692, Sir D. Gooch to Wyndham S. Portal. 27 October 1875, p.48

This was untrue,[283] but the lie gave the LSWR and Midland (who by then had accepted the LSWR directors' proposal) time to offer the SDR a superior leasing agreement to the GWR and BER's purchase offer. The SDR board rejected the GWR and BER's offer on the 19 August and accepted the LSWR's and MR's. The agreement was finalised on the 1 November 1875, with the bill authorising the lease passing on 13 July 1876. [284]

The question is, therefore, what motivated the LSWR directors to acquire control of the SDR. Undoubtedly, the SDR's acquisition was seen by LSWR officials as being potentially beneficial. Scott told the parliamentary committee investigating the matter that despite considerable capital investment being required to make the line efficient, its traffic was 'in its infancy' and he expected it to be 'very large indeed.'[285] Nevertheless, the lease of the SDR was clearly an extension of the line-building competition and quest for regional dominance the LSWR and GWR had been engaging in for decades.[286] The LSWR's actions were wholly reactive. Its directors' proposal to the Midland was spurred by the GWR and BER threat to the LSWR's territorial dominance. Indeed, Portal, the LSWR Deputy-Chairman, admitted that the GWR and BER's acquisition of the SDR would have been 'highly injurious to the interests of the public, contrary to the interests of Parliament and hurtful to the South Western Company.'[287]

Furthermore, the timing and manner of the LSWR directors' decision to lease the SDR strongly suggests that they had little or no strategy regarding network development. Indeed, the revenues the line could potentially generate and the considerable capital expenditure they soon found was required were not considerations in the decision-making process: only a fear of losing territorial dominance compelled the LSWR directors' to approach the Midland's board.

'New' Guildford line

Similarly, the LSWR directors' motivation for constructing the 'new' Guildford line between 1882 and 1885 was to protect the company's regional hegemony. This was LSWR's largest line-building project between 1870 and 1884; although, because the company's financial reports before 1885 lack detail, the total capital expended on it is uncertain. It is however known that between 1878 and 1881 the LSWR's capital expenditure on 'lines in the course of construction' was £111,227;

[283] TNA, RAIL 1066/1692, Sir D. Gooch to the Hon. R.H. Dutton Bart. 26 August 1875, p.44
[284] Williams, *The London and South Western Railway, Volume 2*, p.174-175
[285] TNA, RAIL 1066/1692, Archibald Scott's evidence for Somerset and Dorset Railway Bill, Minute No. 378, p.41-42, 24 March 1876
[286] Simmons, 'South Western v. Great Western,' p.15-24
[287] TNA, RAIL 1066/1692, Wyndham S. Portal. To Sir D. Gooch, 4 September 1875, p.46

whereas between 1882 and 1885 it was much higher at £898,405. Thus, it is reasonable to suggest that the majority of the increased expenditure can be attributed to the 'new' Guildford line's construction.[288]

For reasons that are unclear, the LSWR directors had professed publically their desire to build lines in the Cobham district before 1881.[289] In practice, poor potential traffic in the area meant they had not supported numerous schemes to do so and actively opposed others, as the company may have had to operate these lines, which potentially would have performed poorly financially, to retain dominance of the territory.[290]

In October 1880 local residents and traders, frustrated at the region's lack of railway communication, supported the promotion of the Guildford, Kingston and London Railway (GKLR). It was proposed that this would run from Putney, where it would connect with the Metropolitan District Railway (MDR), through Surbiton and onto Guildford via Cobham. The railway had MDR's informal backing[291] and George Cubitt, M.P. for West Surrey, stated that 'the landowners, finding that they had no hope of obtaining anything from the South-Western Company, went to the Metropolitan Company.'[292]

[288] TNA, RAIL 1110/282, half yearly meetings of the proprietors, 1882-1884
[289] TNA, RAIL 1110/282, Half Yearly meeting of the Proprietors, 6 February 1881, p.1
[290] *Parliamentary Debates* (HC), Third Series, Vol. 260 cc321 (31 March 1881), 'http://hansard.millbanksystems.com/commons/1881/mar/31/second-reading#column_321' (20 May 2011)
[291] TNA, RAIL 411/6, Court of Directors Minute Book, 28 October 1881
[292] *Parliamentary Debates* (HC), Third Series, Vol. 260 cc321 (31 March 1881), 'http://hansard.millbanksystems.com/commons/1881/mar/31/second-reading#column_321'

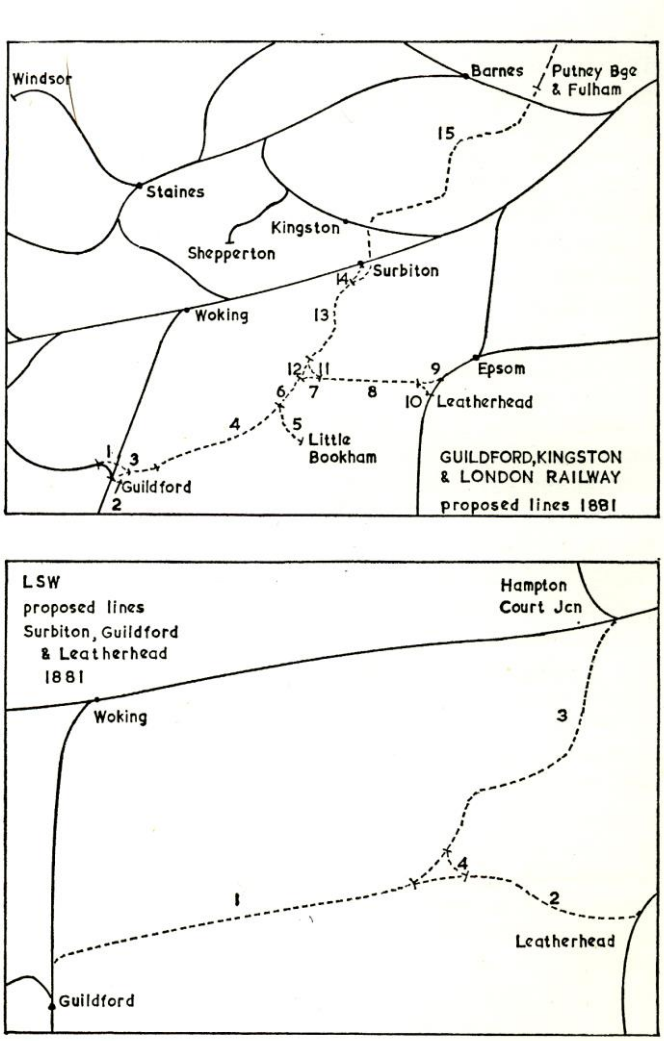

Figure 2: The planned route of the 'Guildford, Kingston and London Railway' and the LSWR's alternative lines. Source: Author's collection

Before 1880 the LSWR's dominant local position had allowed it to thwart the building of railways in the district in 1845, 1862, 1870 and 1880.[293] However, the stated support for the GKLR bill from the MDR, who never actually gave it any formal assistance or made an agreement with the company, strengthened the idea in the LSWR directors' minds that the line would be constructed. If this occurred, it potentially would diminish the LSWR's traffic by extracting trade from places the company already served. In 1881 Dutton stated the project would potentially 'divert traffic from this company's railway at various important points' beyond the Cobham district.[294] Moreover, the MDR, who principally served central London, would have likely operated the GKLR, allowing it to compete for traffic from towns within the LSWR's profitable suburban zone; for example Richmond, Kingston and Surbiton (Figure 2).

In response to the GKLR bill, in the same session of parliament the LSWR submitted its bill for the 'new' Guildford line. Cubitt stated that 'The South Western Company met that [GK&LR] proposal in a peculiar way. They did not say that they thought there was no need for additional railway accommodation; but they said—"If you want fresh railway accommodation we will supply it."'[295]

[293] Williams, *The London and South Western Railway: Volume 2*, p.53-54
[294] TNA, RAIL 1110/283, Half Yearly meeting of the Proprietors, 6 January 1881, p.1
[295] *Parliamentary Debates* (HC), Third Series, Vol. 260 cc321 (31 March 1881), 'http://hansard.millbanksystems.com/commons/1881/mar/31/second-reading#column_321'

Eventually, on the urging of landowners who favoured the LSWR's scheme,[296] an agreement was reached in May to let its bill pass.[297] The line opened in February 1885.[298]

Like their SDR lease the LSWR directors' decision to build the 'new' Guildford line was not part of a strategy to extend the company's network or increase its profits. Their lack of support for previous schemes in the Cobham district demonstrates that they fundamentally believed lines in the region would perform poorly. Yet, when the GKLR was promoted they downplayed these concerns and, as Dutton confirmed in February 1885, built the 'new' Guildford line to defend the LSWR's territorial dominance and revenues.[299] Thus, as in the SDR case, the directors' need to defend the company's regional hegemony overrode their other concerns. Although, in this case the probability of traffic extraction seems rather higher than in that of the SDR.

The Devon and Cornwall Line

Similar motivations were behind the directors' decision to extend the LSWR's lines into Devon and Cornwall in the 1870s, which was part of the company's long-running competition for dominance in the West Country with GWR.[300] In 1873 the Devon and Cornwall Railway (DCR) had had its 'Western Extension Act' passed by Parliament which authorised it to build four different lines west of Okehampton. Given that the DCR was within both the LSWR and GWR's territorial spheres the act interested both companies.[301] The LSWR acted quickest and in 1874 made an agreement with the DCR to work any lines it built for half the revenue. Furthermore, the LSWR received the option to purchase them within two years of opening and, most importantly, could decide which of the four proposed extensions were built.[302] Accordingly, the line to Lydford was opened and purchased by the LSWR in 1874, and the Holsworthy extension was worked from 1878 and purchased in 1880 (Figure 3).[303]

[296] TNA, RAIL 411/6, Court of Directors Minute Book, Minute 2224, 17 March 1881
[297] TNA, RAIL 411/6, Court of Directors Minute Book, Minute 2304, 26 May 1881
[298] Williams, *The London and South Western Railway: Volume 2*, p.57
[299] TNA, RAIL 1110/283, Half Yearly meeting of the Proprietors, 5 February 1885, p.4; Howard Mallinson, *Guildford via Cobham: The Origins of a Country Railway*, (Romsey, 2006), p.146
[300] Simmons, 'South Western v. Great Western,' p.15-24
[301] Williams, *The London and South Western Railway: Volume 2*, p.266-268; MacDermot, revised by Clinker, *History of the Great Western Railway: Volume 2*, p.128-130
[302] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 10 June 1874
[303] Williams, *The London and South Western Railway: Volume 2*, p.266-268

Despite Dutton calling this (and other) western extensions the 'most important features of the railway since its commencement,'[304] realistically between 1870 and 1884 the directors never possessed much urgency to extend the company's lines west of Exeter. Fay stated in 1881 that they had 'eschewed' directly projecting West Country routes.[305] This reluctance to extend westward probably reflected awareness that lines in the territories would not be wholly profitable. For example, in 1860 the chairman of the nearby South Devon Railway stated, incorrectly as it turned out, that it was unlikely the LSWR 'would be anxious to spend their money upon a barren district.'[306] Thus, it seems highly unlikely that when the LSWR directors decided to support and acquire the DCR's lines they were unaware that – as Thomas later put matters – agriculture in the district was in the 'doldrums' and the population was 'depleted.'[307] Nevertheless, because of the GWR's territorial interests, when the DCR's bill was passed the LSWR directors overrode their concerns about how much trade lines in the region could potentially generate and acted to extend the company's regional dominance.[308]

4.3. The extensions' performance

These case studies suggest there was no strategy behind the LSWR directors' decision to expand the company's network between 1870 and 1884, and that they only did so when its territorial dominance, trade or unrealised revenues were threatened. It is important to consider how this largely unplanned and reactive extension of the LSWR's network impacted on its financial performance; but inadequate data means that any assessment is necessarily tentative.

Figure 3: The LSWR's western extensions between 1874 and 1880 (in lighter grey). Source: Author's Collection

[304] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 10 August 1879, p.3
[305] Sam Fay, *The Royal Road*, (Kingston, 1881), p.111-112
[306] Simmons, 'South Western v. Great Western,' p.22
[307] David St. John Thomas, *A Regional History of the Railways of Great Britain: Volume 1 – The West Country*, (Newton Abbot, 1981), p.101-105
[308] Williams, *The London and South Western Railway: Volume 2*, p.248

Firstly, the SDR was a drain on the LSWR and Midland's capital and revenue accounts for little return. A serious accident at Radstock on 13 August 1876, in which thirteen people died and thirty-four were injured, highlighted severe deficiencies in the SDR's working practices and the quality of its infrastructure. Consequently, the LSWR and Midland expended considerable amounts to bring up the line's standard. The LSWR bore much of this burden, because it had responsibility for maintaining the line's infrastructure (whereas, the Midland maintained the locomotives and rolling stock).[309] The total the LSWR expended on the SDR between 1876 and 1885 is unknown because the company's accounts lack this detail. It is known that after 1886 – when it is presumed much of the improvement work had been completed – the LSWR's investment in the line was of note, and between then and 1910 the company expended £238,464 on it, or 1.17 percent of its total capital expenditure in this period.[310]

Despite the capital investment in the SDR, the profits the line generated were never large. The 1876 Act stated that combined the parent companies paid the SDR £43,056 in 1876; £47,840 in 1877; £52,624 in 1878; and £57,408 from 1879 onwards. This was in addition to one tenth of all receipts above £114,816.[311] Yet, until 1891, when the LSWR and Midland gained full ownership of the SDR, its operating profits never rose above the amounts the parent companies had to pay it. Indeed, the SDR ran at a loss from 1876 to 1878, and net revenue only rose above £40,000 in 1890. The SDR's poor performance therefore diminished the LSWR and Midland's profitability between 1876 and 1891. [312] But even after, the SDR's revenues were not high, with its contribution to the LSWR's gross revenue never exceeding two percent before 1911.[313] All that can be said of the SDR's contribution to the LSWR and Midland's profitability is that it fed traffic onto their networks. Unfortunately, the data is unavailable to determine the extent to which this was so.

The 'new' Guildford line was also less profitable than older parts of the LSWR's network between 1885 and the first decade of the 1900s. Given that the district it served was sparsely populated,

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[309] Athill, *The Somerset and Dorset Railway*, p.58-61; *Western Daily Press*, Tuesday 13 February 1877, p.8; TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 12 February 1873, p.3

[310] TNA, RAIL 1110/281, 283 and 284, London and South Western Railway Reports and Accounts, 1886-1910

[311] Thomas, *A Regional History of the Railways of Great Britain: Volume 1*, p.289; Williams, *The London and South Western Railway, Volume 2*, p.176

[312] Williams, *The London and South Western Railway, Volume 2*, p.178

[313] Board of Trade, *Railway Returns*, 1876-1911

its train services were light and poorly used. [314] For example, in February 1903 the local farmers and traders of Leatherhead asked for extra trains on Tuesday and Saturday afternoons to take them to market in Guildford. When the company experimented with such services they were found to have only carried on average six passengers.[315] Such was the paucity of traffic on the line that staff at one station reputedly played cricket in-between trains.[316] Unsurprisingly, shortly after its opening Dutton reported it was 'not paying.'[317] Thus, it can be reasonably considered that after 1885 the 'new' Guildford line was a drag on the LSWR's financial performance thereafter.

The likelihood is that the western extensions' financial performance was also very poor. Simmons – who analysed in detail the line-building competition between the GWR and LSWR in the West Country – argued that it led to 'an over-investment in lines beyond the point at which they were remunerative.'[318] Furthermore, Casson argued the company's competition to build lines in the region 'did not materially improve the provision of railway services, except in north Devon.'[319] This implies that LSWR's lines generated less revenue than if the two companies had cooperated and planned their respective routes so as to avoid competition.

In conclusion, the performance of the SDR, 'new' Guildford line and western extensions was poor compared with established parts of the LSWR's network, making them drags on its profitability. Given that the directors initiated these network extensions to defend the company's territories, overriding their justified concerns that the lines would be poor performers, they clearly were not profit-maximising. Indeed, this is behaviour scholars have argued railways' decision-makers engaged in generally in this period.[320]

4.4. Absent pressures on decision-makers

Before 1885 the directors could build lines to defend the company's territory, overriding their concerns regarding territories' poor revenue-generating potential, because they had few constraints on their freedom of action and could pursue their own goals. Indeed, as Simmons

[314] Mallinson, *Guildford via Cobham*, p.142-143
[315] Stephen Spark, 'Memorialists, Petitioners and Complainers,' *The South Western Circular,* (January 2011), pp.196-205
[316] Mallinson, *Guildford via Cobham*, p.142-143
[317] TNA, RAIL 1110/283, Half Yearly meeting of the Proprietors, 8 August 1885, p.1
[318] Simmons, 'South Western v. Great Western,' p.34
[319] Casson, *The World's First Railway System*, p.143
[320] Dodgson, 'New, disaggregated, British railway total factor productivity growth estimates, 1875 to 1912', p.639; Aldcroft, *British Railways in Transition* ,p.9-14; Cain, 'Railways 1870-1914,' pp.115

argued of the LSWR and GWR's West Country extensions, there was 'rivalry for its own sake, without reference to the interests of the consumer or the investor, merely for the purpose of spiking an opponent's guns.'[321] Indicative of the fact that the LSWR directors had great freedom to pursue their own objectives, project appraisal– a means by which decision-makers could assess the virtue of their decisions and justify them to shareholders – was seemingly non-existent when decisions were taken to extend the company's network.

It can be suggested that the directors could act as they so wished for three reasons. Firstly, they were under little pressure from the capital markets to rigorously assess the virtue of each investment or reduce capital expenditure. Notwithstanding the LSWR's network extensions performing poorly and the company's operational management being very poor (see Sections 3 and 4), its profits remained healthy enough to enable it to raise capital with relative ease. Indeed, between 1870 and 1884 its total capital worth rose from £18.1 million to £31.8 million.[322]

Furthermore, before 1911 the LSWR's shareholders put little pressure on the company's directors to justify to them each investment decision, and they were largely passive in the decisions. At half-yearly general meetings between 1870 and 1884 the shareholders' major concerns were seemingly the company's poor quality train services and its operational costs.[323] The lack of control the shareholders had over the company's policies and strategies is also demonstrated by clauses in the LSWR's 1876 Various Powers Act, which gave the directors power to appoint individuals to the board without the need for the shareholders to be consulted (see Chapter 2).

Lastly, between 1870 and 1884 LSWR decision-makers had little reason to doubt that traffic and revenue growth would continue, or that it could be stimulated if need be. Thus, they probably believed that network extensions would provide good financial returns eventually, even if in the short-term they were poor performers. This assumption's influence on decision-makers' thinking is worth exploring in detail as it has been barely mentioned in the literature. Between 1840 and 1870 the number of passengers the LSWR conveyed rose from 664,518 to 13,387,357, a twenty-fold increase. Consequently, the company's directors and managers believed in guaranteed traffic development long before 1870. For example, in 1857 the board created a special

[321] Simmons, 'South Western v. Great Western,' p.34
[322] Board of Trade, *Railway Returns*, 1870-1884
[323] TNA, RAIL 1110/281 and 283, LSWR Reports and Accounts 1870-1884, various reports of half-yearly meetings

committee to investigate a dip in traffic which was considered highly unusual at the time.[324] Additionally, at a special committee investigating the Nine Elms goods depot's accommodation in 1860, Scott commented that 'should the traffic increase as may be seasonally expected' in twenty years there would be insufficient space for the organisation of goods traffic.[325]

After 1870 LSWR decision-makers' trust in traffic growth possibly altered slightly. Two reports Scott wrote for the board in the early-1880s demonstrate that a decade earlier there had been some worry within the company about first and second class passenger traffic growth slowing, which could potentially have harmed its profitability. Nevertheless, Scott argued that profit growth had been maintained through improved third class accommodation increasing the number of passengers travelling by this means (see Section 4.9). The report heavily implied that decision-makers believed traffic could be easily developed through the manipulation of services.[326] Reflecting this, their statements and actions around this time still suggest they felt traffic and revenue increases were assured. In February 1875 Dutton stated that he hoped and believed 'that with the country we have at our command that within 30 miles of London, we shall increase [passenger traffic]…every year.'[327] When in 1882 the LSWR directors considered moving the Locomotive, Carriage and Wagon works to Eastleigh due to the 'future requirements of the Goods Department,' they presumably expected future traffic growth.[328] Slips were rare, but in 1881 the board requested that Scott explain an unusual fall in traffic revenue.[329] Consequently, it can be suggested that between 1870 and 1884 the LSWR's decision-makers felt free to invest in new lines that initially performed poorly financially, confident in the knowledge that profitable routes could cross-subsidise them for decades if required, but expecting that in the long-term they would likely pay.

Overall, between 1870 and 1884 the LSWR's poor quality decisions to extend its network, which were unplanned and initiated only when its regional dominance came under threat, were the direct result of the company's directors being under little pressure from any source to interrogate the quality of the investments they were making. They had ample freedom to pursue

[324] TNA, RAIL 411/216, Special Committees, Special Committee on the state of the company's traffic, 3 December 1857, p.226
[325] TNA, RAIL 411/217, Special Committee Book, Special Committee on Nine Elms Station Accommodation, 19 December 1860, p.113
[326] TNA, RAIL 411/281, Passenger Traffic - Second Report to Directors, made by Archibald Scott, General Manager and Third Report, Scott's report to the directors, 16 December 1881 and 27 March 1884
[327] TNA, RAIL 411/281, Minutes of the Proceedings of the Half-Yearly General Meeting of proprietors of the London and South Western Railway, 11 February 1875, p.4
[328] HRO, 104A02/A2/11, Locomotive and Stores Committee, Minute No. 1007, 25 May 1882
[329] TNA, RAIL 411/6, Court of Directors Minute Book, Minute 2281, 28 April 1881

their own goals to the detriment of company profitability, as was so in the competition with the GWR for territorial dominance in the West Country.

4.5. Capital Purchases of Lines 1870-1884

Around a third of the LSWR's capital expenditure between 1870 and 1884 went on purchasing lines the company already leased or worked. Figure 4 shows when these acquisitions were made and their cost (also see Appendix 4.1). By 1884 the LSWR leased only thirteen miles of line, down from 124 in 1870.[330]

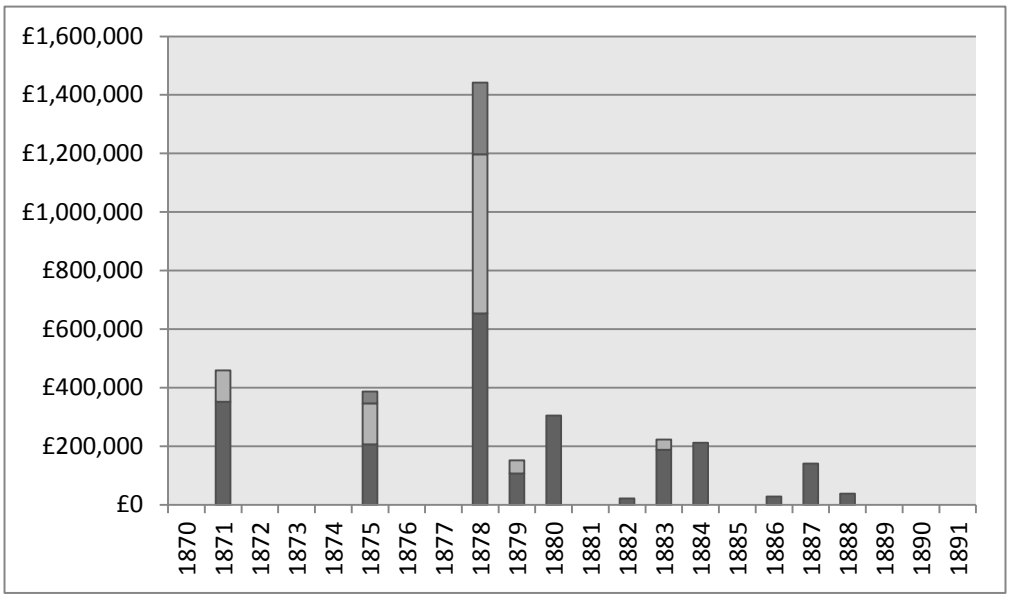

Figure 4: LSWR capital purchases 1870-1891, Source: TNA, RAIL 1110/281, 283 and 284 LSWR Reports and Accounts 1870-1910

The LSWR purchased these lines because the directors wished to consolidate the company's ownership of the network it operated. Dutton, the chairman, commented in 1878 that 'what we are about now is consolidating as fast as we can.'[331] Despite this being the directors' stated strategy, they only purchased lines when external factors presented them with the opportunity to do so. I shall argue, therefore, that between 1870 and 1884 the board employed a strategy of 'opportunistic network consolidation', rather than planned consolidation.

Before 1870 the LSWR made agreements to lease or work many smaller company's lines within its territorial sphere. These arrangements allowed extension and maintenance of its regional control without major capital expense, while also providing the company with the possibility of

[330] TNA, RAIL 1110/281 and 283, London and South Western Railway Reports and Accounts 1831-1898, Half-Yearly reports

[331] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 15 August 1878, p.5

profit. For example, the LSWR agreed with the Salisbury and Yeovil (SYR), [332] Mid-Hants (MHR) [333] and Devon and Cornwall Railways (DCR) [334] to work their lines for 42.5 percent of the gross revenue in 1859, 1865 and 1865 respectively. In agreements with the Staines, Wokingham and Woking Junction Railway (SWWJR), [335] Salisbury and Dorset Junction Railway (SDJR) [336] and Bishop Waltham Railways[337] in 1856, 1866 and 1862 respectively, the LSWR received forty-five percent of gross receipts. These were not lines the LSWR would have necessarily chosen to construct itself: but given that they had been built at others' cost, the company preferred to control them.

Nevertheless, by the 1870s these agreements were increasingly putting the LSWR at a financial disadvantage. Principally because of the company's outdated operating practices (see Sections 3 and 4), its OR rose from 50.11 percent in 1870, to 55.85 percent in 1875 and 56.19 percent in 1880.[338] The LSWR was, therefore, working many of the lines at a loss. Indeed, in 1875 Scott stated the SWWJR was operated 'at a percentage that did not cover its cost',[339] and he said the same of the MHR a year later.[340] This placed pressure on the directors to eliminate the unfavourable financial agreements with these lines, and, thus, they took opportunities to do so.

[332] Ruegg, *The History of a Railway*, p.59,
[333] Williams, *The London and South Western Railway: Volume 1*, p.89
[334] Williams, *The London and South Western Railway: Volume 2*, p.265
[335] TNA, RAIL 1066/2172, Parliamentary Bills and Minutes of Evidence, etc., Mid Hants Railway 1876, Petition against the bill, No. 7, p.2
[336] Williams, *The London and South Western Railway: Volume 2*, p.199
[337] Williams, *The London and South Western Railway: Volume 2*, p.88
[338] Board of Trade, *Railway Returns*, 1870, 1875 and 1880
[339] TNA, RAIL 660/3, Staines, Wokingham and Woking Railway Company, Director's Meetings, 5 April 1875, p.167
[340] TNA, RAIL 1066/2172, Parliamentary Bills and Minutes of Evidence, etc., Mid Hants Railway 1876, Petition against the bill – Archibald Scott's evidence, No. 573, p.47

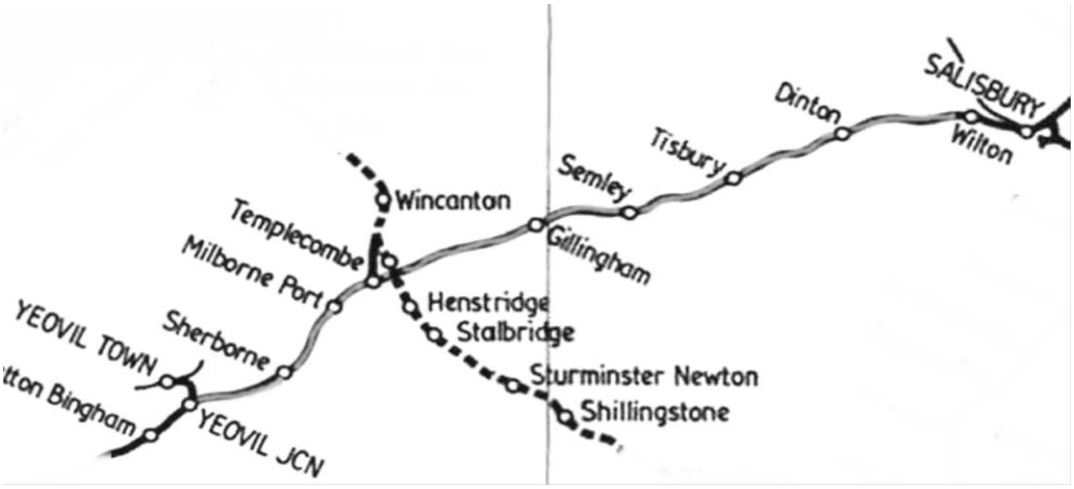

Figure 5: The Salisbury and Yeovil Railway (in lighter grey). Source: Author's Collection

The LSWR's working agreement with the SYR most concerned the board. The SYR formed a portion of the LSWR's western main line, meaning the traffic passing over it was heavy and profitable. Consequently, the amounts the LSWR paid to the SYR were considerable and in 1875 the total was £42,068, or 1.69 percent of the former's total receipts.[341] As Ruegg, the SYR's early historian, argued in 1879, the line was also operated 'considerably under cost price'. Moreover, as the LSWR's traffic increased in the 1870s the SYR came to pay some of the healthiest dividends in the British railway industry. These rose from 9.75 percent in 1875, to 11.25 percent in 1876 and 12.50 percent in 1877.[342]

Continuing this trend, in late 1877 the SYR set its dividend for 1878 even higher at thirteen percent. The LSWR's 1859 lease of the SYR was for twenty years,[343] after which it had the option to re-lease it at a fixed price or purchase it. As the agreement neared its end, the LSWR's directors considered that the higher SYR's dividends would inflate the company's lease or purchase cost in 1879. They therefore acted in

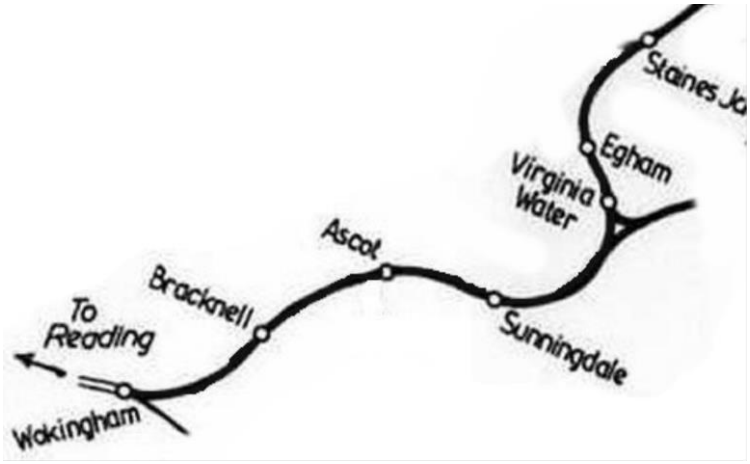

Figure 6: Staines, Wokingham and Woking Junction Railway, (from Staines Junction to Wokingham). Source: Author's Collection

[341] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879
[342] Ruegg, *The History of a Railway*, p.45
[343] Ruegg, *The History of a Railway*, p.59,

advance of the existing lease ending[344] and in late 1877 offered the SYR proprietors £250 of LSWR stock for every £100 of its ordinary stock. This very high offer, which cost the LSWR £653,694, was accepted in early 1878.[345]

Between 1870 and 1884 the LSWR did not only acquire lines because they were diminishing its revenues. Some companies were occasionally uncooperative and unstable working partners, and therefore purchasing them gave LSWR control and removed a source of considerable uncertainty. For example, some of the lines did not adapt their infrastructure to accommodate changes in the nature of the LSWR's train services. The LSWR's agreements with the SYR and SWWJR specified they were to modify their facilities when it required.[346] Accordingly, as the LSWR's traffic increased and trains lengthened in the 1870s, the SYR and SWWJR (Figure 6) were asked to augment accommodation at their stations. Both companies procrastinated. In 1872 the LSWR requested the SYR extend its station's platforms by 50ft. Initially it refused, but after negotiation it agreed to make the modifications.[347] The SWWJR repeatedly declined to augment its station accommodation before 1875[348] as it could not afford the expense.[349] Initially, the LSWR refused to do the necessary work itself,[350] but the situation had become so intolerable by early 1877[351] that it began modifying Bracknell and Egham Stations.[352] The LSWR directors then took the matter to the railway commissioners to recuperate the expenditure, who ruled in their

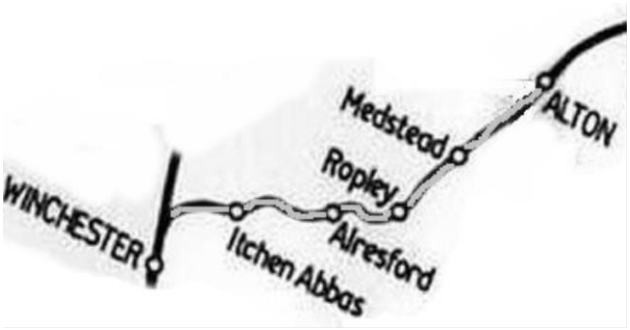

Figure 7: The Mid-Hants Railway (in lighter grey). Source: Author's Collection

[344] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 21 February 1878, p.4
[345] Ruegg, *The History of a Railway*, p.55-56
[346] Williams, *The London and South Western Railway: Volume 2*, p.69
[347] TNA, RAIL 595/4, Salisbury and Yeovil Railway Company, Meetings of Proprietors with:- Board, 14 February 1872, p.272
[348] TNA, RAIL 660/3, Staines, Wokingham and Woking Railway Company, Director's Meetings, 5 April 1875, p.167
[349] Railway Commissioners, [C.1962] The Regulation of Railways Act, 1873. (1876-77.) Fourth annual report of the Railway Commissioners, with appendices 1878, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1878-054149 (1 June 2011), p.29-30
[350] TNA, RAIL 411/243, Traffic Committee Minute Book, Minute 1143, 11 March 1875
[351] TNA, RAIL 660/3, Staines, Wokingham and Woking Railway Company, Director's Meetings, 12 February 1877, p.216
[352] TNA, RAIL 411/7, Court of Directors Minute Book, Minute 49, 23 November 1876

favour.[353] Yet, the SWWJR's inability to meet the expense forced its chairman to approach the LSWR directors to offer them the company for purchase. They took the opportunity and the takeover was completed in 1878.[354]

The directors' other concerns regarding lines the LSWR leased or worked varied in nature. The Bishops Waltham Branch, which the company leased from 1863, was a particularly troublesome partner (Figure 8). In 1881 it was in chancery and had 'no engineer, no secretary – nothing except a lot of creditors.'[355] It was, therefore, difficult for the LSWR to conduct the business of the line and it was purchased in 1882.[356] The MHR also caused problems for the LSWR (Figure 7). In 1876 it applied for powers to run trains independently between Guildford and Winchester, as its directors considered the LSWR had provided the line with inadequate passenger services.[357] These trains would have competed with some of the LSWR's main line services and, thus, the board took the opportunity to neutralise the threat. After much wrangling and the institution of revised lease agreements, the purchase of the line was completed in 1884.[358]

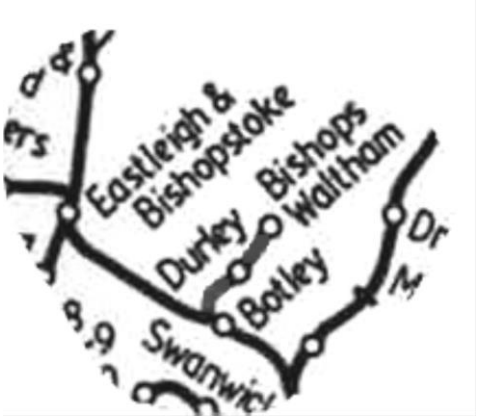

Figure 8: The Bishops Waltham branch (from Botley to Bishops Waltham). Source: Author's Collection

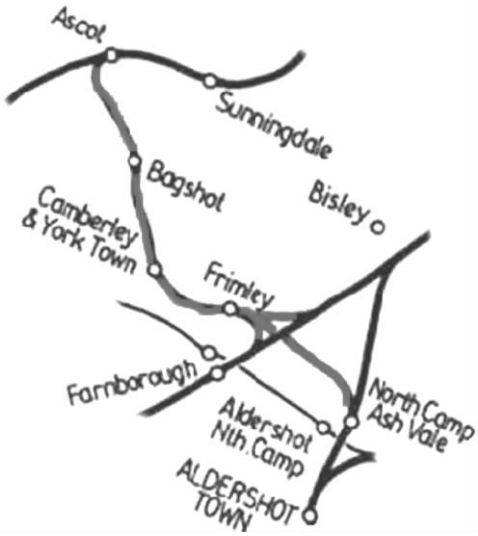

Figure 9: The LSWR's line between the SWWJR and its main line (Ascot – Frimley – Ash Vale). Source: Author's Collection

[353] HCPP, Railway Commissioners, [C.1962] The Regulation of Railways Act, 1873. (1876-77.) Fourth annual report of the Railway Commissioners, with appendices 1878, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1878-054149 (1 June 2011), p.29-30

[354] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 21 February 1878

[355] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1 January 1880 - 31 December 1898, Half-Yearly meeting of proprietors, 4 August 1881

[356] Williams, *The London and South Western Railway: Volume 2*, p.91

[357] TNA, RAIL 1066/2172, Parliamentary Bills and Minutes of Evidence, etc., Mid Hants Railway Bill 1876, p.1-13

[358] Williams, *The London and South Western Railway: Volume 2*, p.87-88

Lastly, as in the case of the SDR lease and the building of the 'new' Guildford line, territorial control was a major concern of the LSWR directors when purchasing some leased and worked lines. For example, the SWWJR was strategically important for the LSWR by 1878. It connected at Wokingham with the South Eastern Railway's (SER) line to Reading, allowing the LSWR access to that place, but also the LSWR was about to open a new line between the SWWJR at Ascot and its main line (Figure 9) – this was built to defend against GWR incursions into its territory.[359] Therefore, when in 1878 the SWWJR could not pay for the modifications the LSWR had made to its stations, rather than letting the concern fail and potentially giving local competitors such as the GWR or SER the chance to acquire it, the LSWR took the opportunity to secure its regional hegemony and purchased it for £543,188.[360]

4.6. 'Opportunistic network consolidation'

That the LSWR acquired so many lines it leased or worked between 1870 and 1884 indicates that the directors undoubtedly pursued a strategy of network consolidation in the period, as Dutton stated.[361] Yet, the cases above also demonstrate that lines were only taken over when the LSWR had the opportunity to do so, or when the company's relationships with these companies had soured to a marked degree. Therefore, the directors' policy regarding the acquisition of such lines can be considered one of 'opportunistic network consolidation'. In part, this strategy was broadly consistent between 1870 and 1884, partly because, as Chapter 3 showed, in the 1870s the board had many long-standing members who likely provided the company with a steady strategic direction.

It should be noted that the LSWR directors did not consider alternative courses of action to acquiring leased lines. Once the strategy of 'opportunistic network consolidation' had become established in their minds in the early 1870s, no pressure was placed on them from any source to reform or reconsider it. As stated, the shareholders were seemingly passive in the LSWR's capital investment decisions, the company could access capital easily and the directors' felt that in the long-run every investment would be worthwhile, because they expected traffic growth to be

[359] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 21 February 1878
[360] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 21 February 1878
[361] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 15 August 1878, p.5

continuous (See section 4.4). Therefore, there were few restrictions on their actions that may have led them to reconsider their investment strategies.

It is unclear how the acquisition of leased lines affected the LSWR's finances. The directors' decision to consolidate the company's network did have a positive effect on its profitability between 1870 and 1884. The overall amount it paid to such lines dropped from 3.42 percent of total company revenue in 1870, to 3.21 percent in 1875, 1.79 percent in 1880 and 0.99 percent in 1884.[362] Yet, what the LSWR saved by paying less to leased companies was small compared to the capital expense of purchasing them. Between, 1870 and 1884 it expended around £3,200,000 on acquiring fifteen lines, which was 236 percent higher than the £952,000 of revenue it paid to them over the fifteen year period.[363] The capital burden of acquiring lines was further augmented by the cost of improving infrastructure after years of neglect; as was required in the case of the SWWJR, BWB and, to an extent, the SYR.

Consequently, because the LSWR's directors pursued, whenever possible, their strategy of opportunistic network consolidation without considering alternative courses of action, the company's capital burden increased excessively for only small returns. However, it should also be considered that Scotter's job of improving the company's operating efficiency was possibly made easier because he commanded a network that was largely in the LSWR's ownership.

4.7. Conclusion

This section has demonstrated that many of the lines the LSWR built or acquired between 1870 and 1884 probably dragged down its profitability. The directors extended the railway's network despite recognising that the new lines would generate poor profits, and once they had begun taking over the lines the company leased or worked, this policy, opportunistic as it was, was seemingly never reappraised, regardless of the heavy burden it placed on the company's capital account or its dubious benefit to the railway's financial performance.

It can therefore be considered that the LSWR directors between 1870 and 1884 were pursuing goals other than profit-maximisation. For example, in the case of the extensions into the West Country the directors' objective was seemingly no more complex than wanting to dominate

[362] TNA, RAIL 1110/281 and 283, London and South Western Railway Reports and Accounts 1831-1898, Half-Yearly reports
[363] TNA, RAIL 1110/281 and 283, London and South Western Railway Reports and Accounts 1831-1898, Half-Yearly reports

portions of territory before the GWR. The reason the directors could take this approach to capital investment was because they were under no pressure to improve the quality of their investments from shareholders, the capital market or a fear that traffic growth would slow.

Nevertheless, as the next three sections show, between 1870 and 1884 the effect on the LSWR's financial performance of the extension and consolidation of its network was small compared with exogenous changes in its trade and severe managerial weaknesses. This is demonstrated by the fact that despite some of the LSWR's investment activity before 1884 unnecessarily increasing the burden on the capital account, after 1885 Scotter's reforms of the company's operating practices had by 1897 improved its ROCE to a point whereby it was 0.16 percent higher than in 1872 (five-year moving average), and its ROCS was only 0.1 percent lower (see Chapter 5).[364] Thus, as Gourvish argued was the case for the British railway industry generally before 1900, 'misplaced investment' was not the most important influence on the LSWR's financial performance between 1870 and 1900.[365]

Section 2 – Operational pressures

4.8. Introduction

As Chapter 1 discussed, it has been extensively argued in the literature that external pressures diminished the performance of the British railway industry before 1900. Therefore, before examining the quality of the LSWR's operational management between 1870 and 1884, I shall analyse how three forces that are considered to have been partially or wholly outside of LSWR decision-makers' control affected the company's profitability. Firstly, it will be argued that growth in low-margin high-volume passenger traffic did depress the company's revenue per passenger and profitability. Secondly, directors and senior managers acquiesced to some requests from employees for higher pay. Lastly, it will be demonstrated how government legislation on safety did not to any great degree affect the company's operating costs.

4.9. Increasing third class passenger traffic

Analysis of the LSWR's passenger business is integral to understanding the company's performance between 1870 and 1884, as between sixty and sixty-four percent of its revenue

[364] Mitchell, Chambers and Crafts, 'How good was the profitability of British railways 1870-1912?' p.807
[365] Gourvish, *Railways and the British Economy*, p.45

came from this traffic. Indeed, similar figures are found for the entire period between 1870 and 1911.[366]

This section argues that while between 1870 and 1884 the number of passengers the LSWR conveyed rose from the 13,387,357 to 34,643,978, it profitability was significantly depressed by the growth of high-volume low-margin third class passenger traffic, particularly in its suburban districts. Firstly, the proportion of LSWR's passengers travelling by third class accommodation increased from 37.42 percent in 1870 to 79.05 percent in 1884. However, concurrently, Figure 10 illustrates that the average revenue generated by each of these passengers dropped from 14.44d to 8.89d (9.59d),[367] or by 38.43 percent. Consequently, because third class passengers became a larger proportion of the LSWR's business over the period, its overall average revenue per passenger fell from 19.77d to 12.38d (13.36d); or by 37.38 percent.

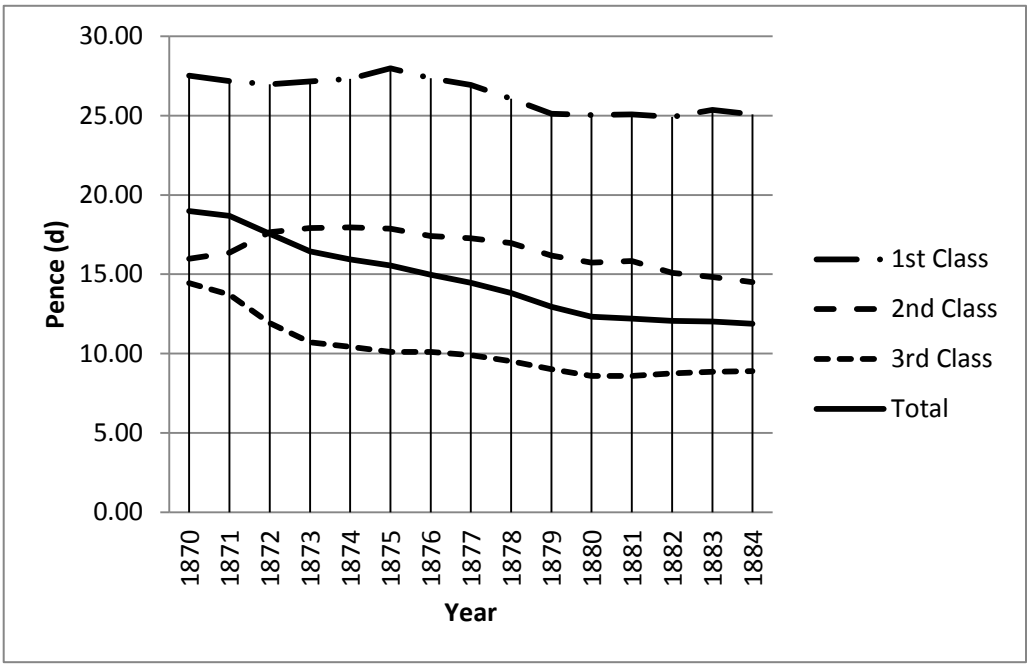

Figure 10: The average number of pence earned per passenger, 1870-1884, Source: Board of Trade Returns.

Figure 11 shows how these changes affected the LSWR's profitability by displaying its operating ratio if all its third class passengers between 1870 and 1884 had paid the same average fare as in 1870. In this counterfactual scenario by 1884 the company's OR would have been around ten percent lower than reality. This strongly suggests that after 1870 these changes in the structure of the company's passenger traffic and revenue significantly affected its profitability. Using the limited available evidence, it is important to examine what caused these changes.

[366] Board of Trade, *Railway Returns 1870-1884*

[367] All inflation adjusted figures are in brackets and have been equalised at 1870 levels.

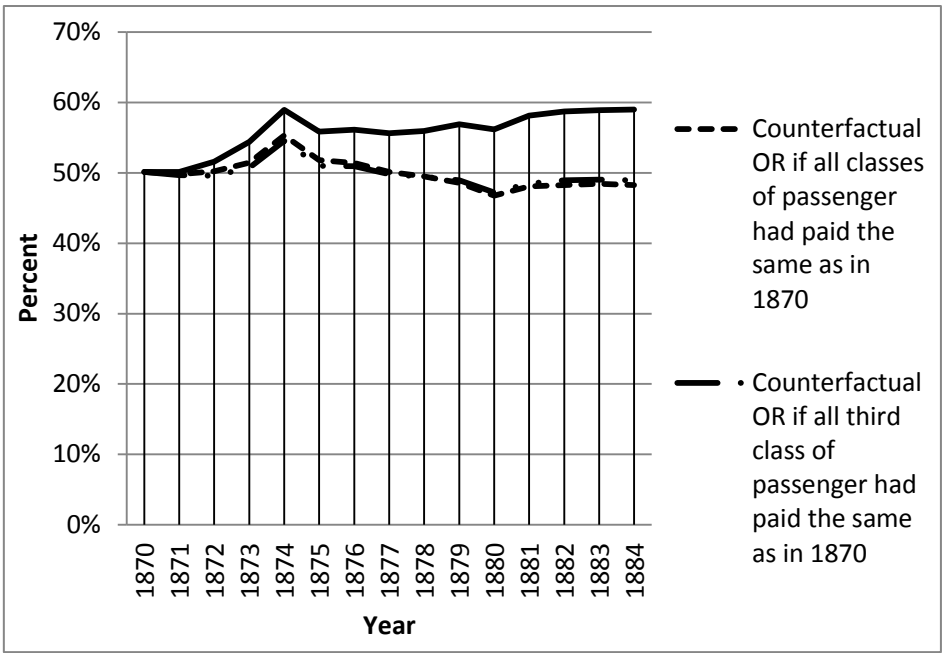

Figure 11: LSWR Operating Ratio if passengers, paid the same average fare as in 1870, Source, Board of Trade, *Railway Returns*, 1870-1884

It is possible the LSWR lowered fares in the early-1870s, as Cain argued many railway companies did at the time.[368] The company did change some of its fares in the period, standardising its third class fares at one penny per mile in 1875.[369] This was possibly in response to the Midland Railway's identical change that year.[370] Nevertheless, Figure 10 shows the company's revenue per third class passenger mostly declined before 1875, suggesting that standardisation did not significantly affect the LSWR's passenger revenues. Thus, fare changes can largely be ruled out as lowering the company's revenue per third class passenger in this period.

Realistically, the LSWR's revenue per passenger declined because more of its passengers were taking shorter, and therefore cheaper, third class journeys, especially in suburban districts. In part the LSWR was responsible for these changes. In the 1860s the company had augmented its suburban network; its Hammersmith, Thames Valley and Kingston lines all opening. This increased the number of routes it owned where shorter journeys were more likely to be taken.[371] Furthermore, from 1871 the LSWR added third class accommodation to all suburban loop line trains because the GWR, who it was in competition with to some places, did the same. This definitely grew the LSWR's third class traffic, and between 1871 and 1872 the proportion of its

[368] Cain, 'Railways 1870-1914: The Maturity of Private System', pp.106
[369] Williams, *London and South Western Railway* , p.312-313
[370] Michael Farr, 'Fares,' in Simmons and Biddle (eds.), *The Oxford Companion to British Railway History*, pp.84
[371] The National Archives [TNA], RAIL 1110/281, London & South Western Railway (formerly London & Southampton Railway), reports and accounts, 1831-1879

passengers buying third class tickets rose by 11.65 percent; a greater increase than in any year before or after (Table 3).[372] Moreover, in the 1870s many passengers, who may previously have taken first and second class accommodation for short journeys transferred to third class because of its improved availability and price. Indeed, in 1879 Dutton stated that first and second class passenger traffic revenue had declined as a result.[373]

	1865	1866	1867	1868	1869	1870	1871
Percentage of Passengers Travelling Third Class	23.42%	25.94%	29.07%	30.72%	34.69%	37.42%	40.85%
Growth		2.52%	3.13%	1.65%	3.96%	2.74%	3.43%

	1872	1873	1874	1875	1876	1877	1878
Percentage of Passengers Travelling Third Class	52.50%	57.88%	60.58%	62.95%	66.55%	68.59%	70.32%
Growth	11.65%	5.37%	2.70%	2.37%	3.60%	2.04%	1.73%

	1879	1880	1881	1882	1883	1884	1881
Percentage of Passengers Travelling Third Class	72.35%	73.63%	75.08%	76.03%	77.71%	79.05%	75.08%
Growth	2.04%	1.27%	1.45%	0.96%	1.68%	1.34%	1.45%

Table 1: Growth in third class passenger numbers 1865-1884, Source: Board of Trade, *Railway Returns*.

Nevertheless, the improved availability of third class accommodation only accelerated the growth in the number of passengers travelling by this means, it did not fundamentally cause these changes to occur. Table 3 shows that between 1865 and 1871 – the year third class accommodation was added to all suburban trains – the proportion of the LSWR's passengers buying third class tickets had already risen considerably from 23.45 percent to 40.85 percent. Therefore, augmentation of third class accommodation only quickened for a short period changes in the nature of the company's passenger traffic that had been on-going for years. Indeed, after 1874 the proportion of the LSWR passengers travelling by third class accommodation returned to growing at a similar rate as in the late-1860s

The evidence therefore tentatively suggests that after 1870 the LSWR's reduced revenue per passenger and some of its decreased profitability can be attributed to the markets it served changing. Furthermore, it should be considered that because the LSWR served a large suburban

[372] Williams, *London and South Western Railway*, p.312-313
[373] TNA, RAIL 1110/283, London & South Western Railway Reports and Accounts, Report of Half-Yearly meeting, 13 February 1879, p.4

district, and the majority of its revenue was generated from passenger traffic, its profit margins were possibly more susceptible to the structure of its trade shifting in this way than other railways whose main traffic was freight or where they carried predominantly long-distance passengers. Yet, to prove this would require comparative case studies which are currently unavailable.

How this change in the company's traffic altered decision-makers' thinking on policy and strategy is unclear. Scott's report for the directors in 1881 expressed erroneously, as the above figures show, his belief that the expansion of third class accommodation in the early-1870s had caused the number of passengers travelling by this means to increase. He argued that with first and second class traffic becoming 'non-elastic throughout the kingdom' in the 1870s, railway companies kept passenger numbers and revenue growing by improving third class passenger accommodation. In his opinion they had hugely benefited from this policy, and going forward he believed that it was a 'mistake to suppose that the increased accommodation for Third Class passengers is, in any respect or degree, an evil - something to be restricted or altogether stopped if possible.'[374] Therefore, Scott did not feel company profits were under pressure from this traffic rising; rather he welcomed it as sustaining the business.

Scott's comments therefore tentatively suggest a reason why railway companies, at least those which principally carried passengers, provided improved service provision to customers from the 1880s: they thought this was the only way of growing their business when first and second class passenger growth had stalled. If this was so, it would partially call into question the arguments made by Arnold and McCartney, Channon, and Irving that British railways tailored services to the needs of the communities and businesses they served in an attempt to preserve their commercial freedom, in a period when government was increasingly legislating over rates and safety.[375]

4.10. Wages

Railway companies' increasing wage bills have long been considered to have reduced the industry's profitability after 1870.[376] The LSWR was no exception, and the pay and employment conditions of its staff also improved in this period. Figure 12 illustrates that between 1870 and 1884 wage costs as a proportion of the Locomotive (including the Carriage and Wagon

[374] TNA, RAIL 411/281, Passenger Traffic - Second Report to Directors, made by Archibald Scott, General Manager and Third Report, Scott's report to the directors, 16 December 1881, p.5
[375] Arnold and McCartney, 'Rates of return,' p.54-57; Irving, 'The Profitability and Performance of British Railways 1870-1914', p.54-55,
[376] Irving, 'The Profitability and Performance of British Railways,' p.49

Department's) and Traffic Department's overall expenditure rose. The question is why did the LSWR increase its employees' pay and how did this affect its cost position?

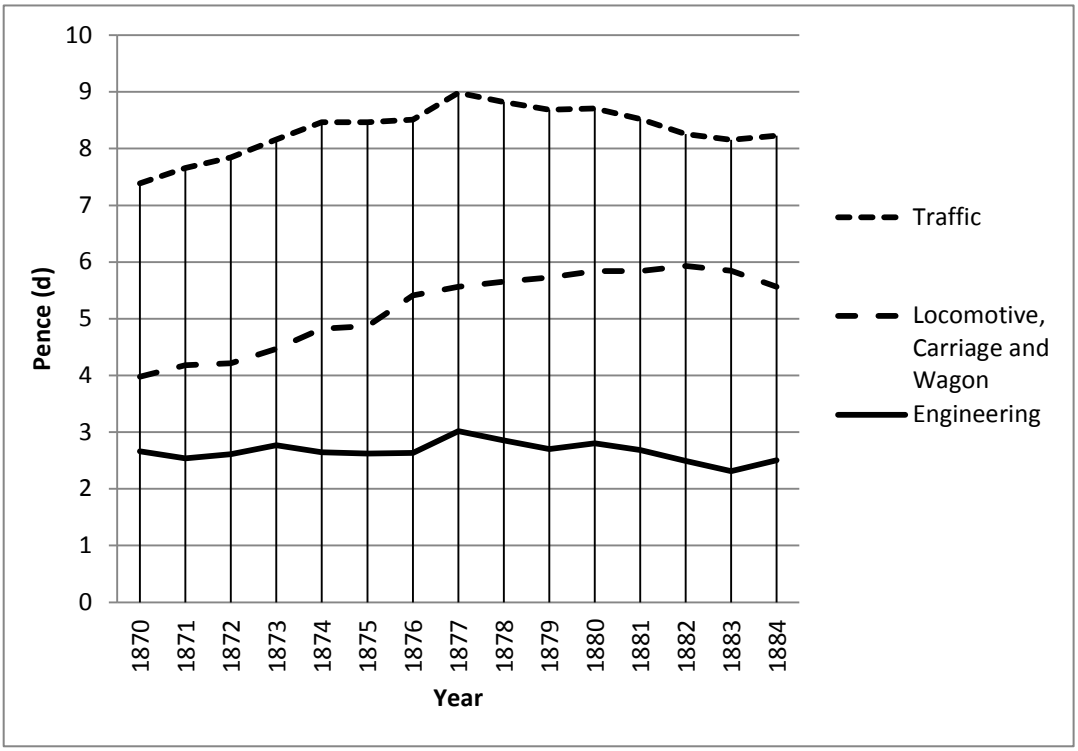

Figure 12: Wage costs of major departments (pence per train mile), Source: TNA, RAIL 1110/281 and TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1870-1884

Union pressure is unlikely to have influenced the LSWR's wage policies after 1870. Three main unions were formed in this period. The first, the Amalgamated Society of Railway Servants (ASRS) – founded in 1871 – was, as Howell argued, initially more a 'friendly society' that lacked employer recognition and was poorly led. It was only when Edward Harford became leader in 1883 that the ASRS developed more coherent strategies of activism.[377] However, as Chapter 6 argues, up until 1911 few LSWR employees joined the unions and they remained weak within the LSWR.[378] Furthermore, Howell argued that until 1900 the smaller General Railway Workers Railway Union (founded in 1889) and the Associated Society of Locomotive Engineers and Firemen (founded in 1880) never put credible pressure on industry chiefs to improve their members' pay and conditions. [379] It cannot, therefore, be considered that between 1870 and 1900 LSWR decision-makers were under much pressure from unions to improve the pay and conditions of their company's employees.

[377] David Howell, *Respectable Radicals: Studies in the politics of railway trade unionism*, (Aldershot, 1999), p.6
[378] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.188
[379] Howell, *Respectable Radicals*, p.6-7

Wage increases before 1877

The Locomotive, Carriage and Wagon Department's (hereon known as the 'Locomotive Department') increased wage bill between 1870 and 1884 was principally the result of directors and senior officials acquiescing to employees' requests for higher pay and reduced working hours. For instance, a memorial by drivers and firemen requesting these things was rejected by the Locomotive Committee in March 1872. Nevertheless, the committee conducted an inquiry into their pay,[380] and after another similar memorial was submitted in October[381] a revised scale of wages was presented to the board by William Beattie, the Locomotive Superintendent, in March 1873.[382] It seems however that this new scale was not adopted; another petition from 400 enginemen and firemen requesting increased pay and reduced hours was submitted to the directors in May 1874 (Appendix 4.2).[383] This was agreed to shortly after.[384] Other groups of staff in the department also asked for changed terms of employment around this time. In November 1871 Nine Elms works employees asked for shorter hours,[385] while carpenters and carriage cleaners at Clapham Junction and coal burners at Nine Elms also asked for increased wages in April 1874.[386] While all these specific claims were rejected, department employees did generally receive higher pay and reduced working hours in the period, which, as Castleman (chairman) stated in 1874, grew the company's wage bill.[387]

Consequently, in the 1870s the proportion of the Locomotive, Carriage and Wagon Departments' expenditure attributable to wages increased considerably. Figure 13 shows that in 1870 wages constituted 39.98 percent of departmental costs, but by 1877 this had risen to 49.42 percent.[388] The department's wage bill per train mile also grew from 3.98d to 5.56d (5.44d) over the same period (Figure 12). As a consequence, these increases permanently raised the Locomotive,

[380] TNA, RAIL 411/182, Locomotive Committee Minute Book, Minute 394, 7 March 1872
[381] TNA, RAIL 411/182, Locomotive Committee Minute Book, Minute 461, 24 October 1872
[382] TNA, RAIL 411/182, Locomotive Committee Minute Book, Minute 501, 27 March 1873
[383] *Tamworth Herald*, Saturday 16 May 1874, p.3
[384] TNA, RAIL 411/182, Locomotive Committee Minute Book, Minute 626, 21 May 1874
[385] TNA, RAIL 411/182, Locomotive Committee Minute Book, Minute 359, 16 November 1871
[386] TNA, RAIL 411/182, Locomotive Committee Minute Book, Minutes 609 and 610, 23 April 1874
[387] TNA, RAIL 1110/281 and RAIL 1110/283, London and South Western Railway Reports and Accounts 1870-1884, June and December 1874 half-yearly reports, p.2
[388] TNA, RAIL 1110/281 and RAIL 1110/283, London and South Western Railway Reports and Accounts 1870-1884

Carriage and Wagon Department's expenditure on staff – which stayed around fifty percent of departmental expenditure until the late-1890s.[389]

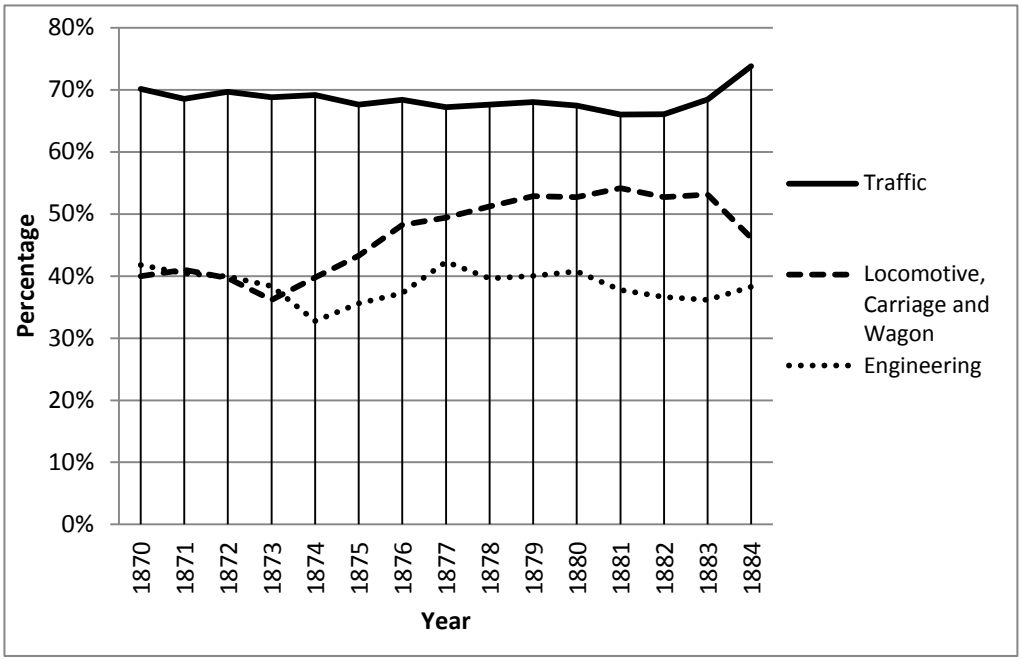

Figure 13: Wage costs as a proportion of department costs of the LSWR's major departments, Source: TNA, RAIL 1110/281 and TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1870-1884

Wage costs also increased in the Traffic Department in the 1870s. In the period the board received many individual applications for salary increases from the company's clerical staff and it formed a Special Committee in March 1874 to examine the issue. [390] To monitor such applications closely, the committee ordered that all requests for salary increases were to receive its attention. Furthermore, each application was to be accompanied by a recommendation letter from the department head.[391] Between then and April 1876 the committee approved increases totalling £3,499. Although, this only constituted 0.41 percent of the rise in the department's wage bill over this period.[392] Principally, the Traffic Department's wage bill rose because expenditure on non-salaried employees' pay increased. In 1882 *The South Western Gazette* (*SWG)* mentioned that 'for some years past' they had received pay increases, while the salaried grades had not.[393] Furthermore, the installation of block working after 1864 (see Section 4.13) required the company to employ larger numbers of signalman, further increasing the

[389] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Report of Half-yearly meeting, 10 August 1876, p.1; TNA, RAIL 1110/281, 282 and 284, London and South Western Railway Reports and Accounts 1831-1922
[390] TNA, RAIL 411/220, Special Committee Minute Book, Salaries Committee, 16 March 1874, p.277
[391] TNA, RAIL 411/220, Special Committee Minute Book, Salaries Committee, 29 April 1874, p.296
[392] TNA, RAIL 411/220, Special Committee Minute Book, Salaries Committee, 28 May 1874, p.296; TNA, RAIL 411/221, Special Committee Minute Book, Salaries Committee, 28 January 1875, p.32-33; TNA, RAIL 411/221, Special Committee Minute Book, Salaries Committee, 6 April 1876, p.113
[393] *South Western Gazette*, August 1882, p.2

department's expenditure on wages.[394] Consequently, the Traffic Department's wage bill rose from 7.38d to 8.98d (8.79d) per train mile between 1870 and 1877 (Figure 12).

The limited available evidence tentatively suggests that decision-makers raised employees' wages and reduced their working hours because they feared losing skilled and trained labour that the company had fostered, in some cases, over decades. Exemplifying this, in January 1879, when Scott was challenged by other railways to reduce Traffic Department staff's wages, he responded by stating that 'he had got some good men and he meant to keep them.'[395] Furthermore, Dutton commented in 1878 that the proprietors had to 'accept' a raised wage bill as part of railway operation, suggesting that, possibly, decision-makers felt that to keep hold of staff and ensure the company's smooth working they had to raise employees' pay.[396]

Therefore, it can be suggested that before 1877 senior LSWR decision-makers' fear of losing trained and experienced staff possibly led them to be more malleable when it came to responding to employee's demands regarding their working conditions and wages. Although, without further evidence this remains largely conjecture. Whatever the cause, between 1870 and 1877 the total wage bill spread across the company's four main departments rose from 14.02d to 17.57d (17.02d) per train mile; or by 25.28 percent.

After 1877

However, evidently in the late-1870s and early 1880s Scott, the General Manager, felt he could keep wages in the Traffic Department higher than perhaps was necessary. In the period most British railways were lowering their employees' pay, and in 1881 Scott was under pressure from their officials to reduce his staff's wages by five percent. Yet, he refused to prevent what the *SWG* described as a 'breech in the good relations existing between the board of directors and the hard working servants.'[397] Conversely, and despite the company's wage costs increasing considerably since 1870, he seemingly favoured increasing wages in the Traffic Department.[398] In January 1882 the department's salaried staff submitted a memorial asking the directors for a revised salary scale. On Scott's recommendation this was introduced in May. 380 individuals

[394] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Report of Half-yearly meeting, 14 February 1878, p.2
[395] WFC, Sam Fay's Diary, 14 January 1879
[396] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Report of Half-yearly meeting, 14 February 1878, p.2
[397] WFC, Sam Fay's Diary, 14 January 1879; *South Western Gazette*, December 1881, p.2; *South Western Gazette*, June 1882, p.2
[398] *South Western Gazette*, December 1881, p.2

received increases costing £4000 overall and a rule was introduced that when a clerk or station master was promoted his successor would receive the same wage as the outgoing individual. [399]

The wage increases these changes incurred were justified to the shareholders in the same terms as pay increases had been in the 1870s: that they were a natural part of railway operation. In August 1883 Dutton stated that the shareholders must accept that 'the tendency of salaries and wages was upwards, and they must not look for a reduction in that direction.'[400] Yet, realistically Scott did not need to raise wages in the early-1880s and, thus, his decisions are unlikely to have had the company's cost position in mind. Indeed, his actions were very different to what Irving characterised as the 'marked hostility' of British railway managers at the time to forms of collective action by railways' employees.[401] Scott's motivation for raising wages, it can be tentatively suggested, was that given he had been head of the Traffic Department since 1852, he had developed a long-standing paternalistic relationship with the traffic staff. The *SWG* evidenced this connection frequently, calling him 'approachable' and 'beloved'. Indeed, Scott would sit every Sunday morning in his office and 'listen to the pleadings' of less fortunate members of staff and 'seldom was a case of distress turned away.'[402] Therefore, despite Scott obviously not trying to maximise company profits by raising wages in the Traffic Department, he was likely improving his subordinates' lives. Indeed, in 1882 the *SWG* stated that:

> When we look around at the servants of other companies and see "cutting down" is the order of the day, we must thank our lucky stars that we are governed by a band of English gentleman, who…remember there are others beside shareholders and the public having some little claim on their consideration.[403]

As Figure 13 shows, the result of the revised scale was that it raised Traffic Department wage costs as a proportion of departmental expenditure after 1882. Undoubtedly, this contributed to the LSWR's OR being one of the poorest amongst the British railway industry's major companies in the early 1880s. Indeed, between 1882 and 1886 the Traffic Department's wage bill as a proportion of overall company revenue rose from 12.08 percent to 13.06 percent.

[399] *South Western Gazette*, June 1882, p.2
[400] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Report of Half-yearly meeting, 3 August 1883, p.1
[401] Irving, *The North Eastern Railway Company*, p.54-55
[402] *South Western Gazette*, December 1884, p.4
[403] *South Western Gazette*, June 1882, p.2

Conclusion

This section has supported Irving's argument that British railway companies' increased wage bills were partially responsible for their declining performance between 1870 and 1900.[404] Indeed, between 1870 and 1884 the LSWR's profitability was diminished by decision-makers acquiescing to employees' requests for higher wages and shorter working hours, possibly because they feared losing trained labour that the company had fostered for years, possibly decades. Yet, it has also been suggested that Scott unnecessarily raised the Traffic Department's wage bill in the 1880s, which undoubtedly contributed to the LSWR being one of the poorest performing British railway companies in the period. Thus, this case tentatively supports Crafts, Mills and Mulatu's suggestion before 1900 decision-makers had 'ample opportunity' to neglect cost reductions and productivity improvements while pursuing their own goals.[405] However, without more evidence, or more case studies, this cannot be confirmed.

4.11. Safety legislation

As Chapter 1 discussed, the British railway industry came under increased pressure after 1880 from government legislation on matters such as safety and rates. It is therefore important to address how this factor affected the company's performance. It might seem more appropriate to consider this subject in the next chapter, as it covers the year of the Armargh accident (1889), after which the government made continuous brakes, interlocking points and signalling, and block working mandatory on all British railways.[406] Yet by 1885 the LSWR already possessed or had started to install these safety devices and this is why this section is placed within this chapter. I shall assess why the LSWR's senior decision-makers took such decisions between the 1860s and 1880s, and shall show they had a negligible impact on company profitability.

Technology installation

By 1875 block working was installed throughout the LSWR's network. In 1864 an accident occurred at the company's Egham station because the established time-interval method of train control – where trains were released from stations after a set amount of time had elapsed since the preceding one had departed – failed. Yolland, the Board of Trade inspector, stated that block working – an alternative system of train control where distance intervals separated trains – could

[404] Irving, 'The Profitability and Performance of British Railways,' p.49
[405] Crafts, Mills, and Mutlau, 'Total factor productivity growth on Britain's railways, 1852–1912', p.632
[406] Gourvish, *Railways and the British Economy*, p.52

have prevented the accident, and criticised the LSWR's directors for being more willing to risk human life than incur the high cost of installing it.[407] While after most accidents companies' officials largely ignored such comments and public outrage, the LSWR's board responded differently. Three minutes behind the crashed train was another carrying the Prince of Wales. Consequently, on 27 December 1864 C. Phipps wrote to the directors on behalf of Queen Victoria. She wished them to take 'the greatest possible care to prevent accidents on the line.' The company chairman, Mangles, responded that her 'commands would be strictly adhered to,'[408] and by 1875 block signalling had be installed across the company's network.[409] From 1865 the LSWR also began interlocking its points and signals,[410] and by 1880, 1008 of its 1,147 points were interlocked.[411] Thus, by 1889, when the technology became mandatory, the likelihood is that all the company's signals and points would have possessed it. Unfortunately, the LSWR's expenditure on installing interlocking signals and block working is unknown.

Another technology the 1889 Act made mandatory was continuous brakes, where all the wheels of a passenger trains would be braked simultaneously, thus bringing it to a halt more quickly than if just the locomotive was braking.[412] The LSWR however had already applied this to all its locomotives and carriages by 1889. After much experimentation with different types of continuous brake systems, the automatic vacuum brake was progressively installed between March 1883 and June 1888[413] as it was deemed much cheaper to maintain than the alternatives.[414] The overall capital cost work was small, and the LSWR's outlay on it between 1883 and 1888 was £94,277; or 1.56 percent of its total capital expenditure in these years (Table 1).

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[407] Colonel W. Yolland, Board of Trade Report into Egham Accident, 5 July 1864, http://www.railwaysarchive.co.uk/documents/BoT_Egham1864.pdf, (27 June 2011)
[408] TNA, RAIL 1110/281, Reports and Accounts, Half-Yearly meeting of proprietors, 18 August 1864, p.4
[409] TNA, RAIL 1110/281 LSWR Reports and Accounts, 1834-1879, report of half-yearly meeting of proprietors, 12 August 1875
[410] TNA, RAIL 1110/281, Reports and Accounts, Half-Yearly meeting of proprietors, 18 August 1864, p.4; Henry Parris, Government and the Railways in Nineteenth Century Britain, (London, 1965), p.196-197
[411] HCPP, 1881 [C.2869] Railways (signal arrangements and systems of working). Return (in pursuance of "the Railway Regulation Act (Return of Signal Arrangements, Working, &c.), 1873,") by railway companies in the United Kingdom relative to (1.) the interlocking and concentrating of signal and point levers, &c., and to (2.) the system or systems upon which the lines of railway under their control were worked, on 31st December 1880. http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1881-057657 (2 December 2011)
[412] Rodney Weaver, 'Brakes', in Simmons and Biddle (eds.), *The Oxford Companion to British Railway History*, pp.39-42
[413] RAIL 411/44, Engineering and Stores Committee Book, 1884-1887 and RAIL 411/186, Locomotive Committee Minute Book 1885-1889
[414] Bradley, D.L., *LSWR Locomotives: The Adams Classes*, (Didcot, 1985), p.12

Year	Annual Capital Cost of Continuous Vacuum Brake	Percentage of Capital expended on Continuous Vacuum Brake
1883	£21,724	2.00%
1884	£21,881	1.79%
1885	£19,940	1.92%
1886	£12,453	1.31%
1887	£13,434	1.31%
1888	£4,844	0.68%
Total	**£94,277**	**1.56%**

Table 2: Capital expended on vacuum brake 1883-1888. Source: TNA, RAIL 1110/283, LSWR Reports and Accounts, 1885-1897

Why, then, did the directors decide to install these technologies when they did? The most likely explanation is that they wished to maintain the company's public reputation. For a railway that predominantly carried passengers, accidents were public relations disasters. This is why, in the absence of another plausible explanation, it was directly after the Egham accident and Queen Victoria's letter that block working and interlocking points were introduced across the company's network in a period when so many other companies resisted doing the same. It can be suggested that similar motivations were behind the company's decision to install vacuum brakes. By the early-1880s the imperative for LSWR officials to maintain the company's reputation for providing a safe travelling environment was compounded by its exemplary accident record up to that point.[415] Thus, only months after a major collision at Clapham Junction in 1882, which the Board of Trade inspector stated would have been averted if the trains had been fitted with continuous brakes,[416] the LSWR committed to installing them on all its locomotives and carriages, one of the first major companies to do so.[417]

Undoubtedly, these technologies did increase company expenditure. Firstly, block working increased the number of signalmen the company had to employ, which raised wage costs (see section 4.9). All three technologies also incurred maintenance costs; for example, a report to the Locomotive Committee from Adams stated that the maintenance of continuous vacuum brakes

[415] C. Hamilton Ellis, *The London and South Western Railway: Its Mechanical History and Background – 1838-1922*, (London, 1956), p.123; *Hampshire Advertiser*, Wednesday 28 January 1885

[416] Board of Trade, [C.3450], Railway accidents. Returns of accidents and casualties as reported to the Board of Trade by the several railway companies in the United Kingdom, during the nine months ending 30 September 1882, in pursuance of the Regulation of Railways Act (1871), 34 & 35 Vict. cap., http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1882-058751 (15 January 2012),p.105

[417] Hamilton Ellis, *The London and South Western Railway*, (London, 1956), p.123

cost the Locomotive Department £4 6s 10d per locomotive (he failed to specify over what period of time).[418] Furthermore, continuous brakes also increased locomotives' usage of fuel.[419]

Years	Compensation paid	Proportion of company expenditure
1870-1874	£23,003	0.41%
1875-1879	£40,968	0.55%
1880-1884	£54,552	0.63%
1885-1889	£34,098	0.38%
1890-1894	£28,014	0.27%
1895-1899	£21,839	0.17%

Table 3: Compensation paid to passengers for accidents between 1870 and 1900, Source: Board of Trade, *Railway Returns*

On the other hand, the safety technologies also reduced the LSWR's operational expenditure. Between 1880 and 1899 the compensation the company paid to injured passengers reduced, presumably because the number of accidents on its network fell (Table 2). Moreover, continuous brakes possibly reduced labour costs. Bradley stated that as the company's trains got heavier and faster in the 1860s the practice developed of placing numerous brake vans throughout them so that drivers could stop them effectively. Yet, this was labour-intensive as most trains required several guard's vans, each with a capable brakesman. Continuous brakes eliminated the need for so many vans and brakesmen in trains, which likely reduced working expenses.[420]

Overall, it is very unclear how the LSWR directors' decision to install block working, interlocking points and continuous brakes impacted on the company's cost position between 1870 and 1884 (and thereafter). However, whatever the effect, findings presented in the rest of the thesis suggest it was marginal compared to the immense cost of the company's operating and administrative practices. Ultimately, therefore, the LSWR's case gives some weight to Gourvish's argument that it is too easy to blame government intervention for railway companies' declining performance between 1870 and 1914.[421] Conversely, it also tentatively supports the conclusions of Mitchell, Chambers, Crafts, Leunig, Mulatu and Mills that weak government regulation did not

[418] Bradley, *LSWR Locomotives – the Adams Classes*, p.12
[419] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Statement of William Adams to Engineering Committee, 13 February 1883
[420] Bradley, *LSWR Locomotives – the Adams Classes*, p.11
[421] Gourvish, *Railways and the British Economy, 1830-1914*, p.46;

put sufficient pressure on industry decision-makers to improve railways' performance or innovate.[422] However, without more evidence this remains conjecture.

Section 3 – Operational matters until c.1881

Despite increasing wage costs, growth in high-volume low-margin third class passenger traffic, and the installation of safety technology all influencing the LSWR's profitability between 1870 and 1884 (and 1900), this chapter chiefly argues that the company's poor financial performance was caused by severe weaknesses in its operational management. Scott, the Traffic Department's head since 1852, persisted with using obsolete and inefficient train control practices; Beattie, the Locomotive Superintendent, was completely inept and managed the Locomotive Department incompetently; while his successor, Adams, introduced new heavy locomotives without considering that they would raise the Engineering Department's costs. Furthermore, I argue these problems emerged partly because the department heads' actions were poorly coordinated and overseen by the board before 1881, and then by the General Manager until 1884.

The next two sections develop this thesis' main arguments. Because the LSWR's structure was excessively centralised, and senior officials potentially occupied positions of authority for decades with few restrictions on their autonomy, their concepts of railway management had a tendency to stagnate or become conservative over time, meaning established operational practices were infrequently reassessed and developed inefficiencies. Secondly, as operational practice within the company developed very slowly, significant advancements only occurred when new senior managers were appointed from external sources. Lastly, the company's profitability was reliant on how effectively department heads' actions were coordinated and overseen.

4.12. Operational control structures, 1870-c.1881

Until 1881 the LSWR's directorate retained responsibility for coordinating and overseeing the different departments' operational affairs – responsibilities that in other British railways of the period General Managers undertook.[423] Chapter 3 argued the reason was two-fold. Firstly, the

[422] Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632

[423] Channon, *Railways in Britain and the United States, 1830-1940*, p.42 and p284-285; Bonavia, *The Organisation of British Railways,* p.17-18; Irving, *The North Eastern Railway Company*, p.261-264; Simmons,

directors' few outside business interests meant they had time to dedicate to the business. Secondly, until the late-1870s most directors had joined the company before 1854 and, presumably, they felt they should still take a dominant role in the company's operational management, as they had done in the 1850s. However, as the next two sections show, after 1870 severe operational efficiencies developed in the Traffic and Locomotive Department because, as section 4.16 explains, the board was unable to oversee and coordinate the company's operational functions effectively.

4.13. Traffic Operations

The Traffic Department was responsible for managing the parts of the LSWR's business that were critical to its overall efficiency. Firstly, it was responsible for administering the company's core business function, the movement of goods and passengers. Secondly, it formulated the company's timetables, which largely determined how efficient its train movements were. Thirdly, its senior officials assessed and recommended what infrastructure and rolling stock alterations or additions were required for the service's smooth working. Lastly, the Traffic Department employed more staff than any other department: 6,366 out of the LSWR's 15,371 employees in 1884.[424] How efficiently the Traffic Department was run was therefore an important determinant of the LSWR's overall financial performance between 1870 and 1911.

Between 1870 and 1881 the inefficiencies that developed in the LSWR's traffic operations primarily caused the company's poor profitability. Scott was appointed the Traffic Department's head in 1852, and until 1881 retained close control over its management.[425] Yet, after 1870 he did not adapt its operational practices, which he had established in the 1850s and 1860s, to cope with the company's rising traffic levels and increased operational complexity. This was because, having developed his knowledge of railway management in the 1840s and 1850s, and having not worked outside the company since he joined it, after 1870 he did not have the experience to adjust the company's traffic practices to its changing requirements. As Section 4.16 shows, there

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The Railway in England and Wales 1830-1914, p.247; Barnes, *The Midland Main Line – 1875-1922*, p.226; Simmons, 'Fay, Sir Sam,' in Simmons and Biddle (eds.) *The Oxford Companion to British Railway History*, pp.136

[424] HCPP, Board of Trade, (242) Railways (number of persons employed). Return of the number of persons employed by each of the railway companies of the United Kingdom on 31 March 1884 (classified according to the nature of the work performed by them); &c., 1884, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1884-060841 (12 December 2011)

[425] *The South Western Gazette*, December 1881, p.2

was also no pressure on him from inside or outside the company to improve or update his thinking on railway operation.

Train Operations

Between 1870 and 1881 the number of passengers the LSWR conveyed rose from 13,387,357 to 31,121,274. [426] Over this period its train operations became progressively inefficient. Symptomatic of this inefficiency was increased congestion on the main lines; chiefly outside of Waterloo Station, the company's London terminus, which was a bottleneck. Even though this was not reported in the company's official files, trains were frequently criticised for being slow and keeping poor time by those outside it. For example, *Funny Folks* magazine in 1878 mentioned a LSWR season ticket holder who unsuccessfully brought an action against the company because of train delays.[427] In 1880 a *Standard* reader argued that the 'unpunctuality of the [LSWR's] trains was notorious' and that he had never arrived at Waterloo on time.[428] Furthermore, in the mid-1870s Hounslow residents formed an 'Acceleration Movement Committee' to campaign for improvements to the train service.[429] Lastly, in February 1878 the problem was acknowledged by Dutton who stated that 'we have very great difficulty getting trains into this [Waterloo] station faster than we do.[430]

This congestion was partially caused by the lethargic approach the directors, who controlled the LSWR's capital investment policy in the 1870s, had to augmenting the capacity of the LSWR's network near London through investment. Investment ran behind demand. The company's first enlargement of Waterloo Station opened in 1878. It did not significantly relieve main line congestion, as it possessed only two extra platforms,[431] and only three years later a further extension was planned.[432] Furthermore, it was only in 1878 that directors' started considering plans Scott had drawn up for widening the company's main lines to increase their capacity (see Section 4.17).[433] Thus, despite the LSWR's expenditure on 'lines open for traffic' constituting £2,099,652 between 1870 and 1880, or 31.90 per cent of the company's total capital spending in

[426] Board of Trade, *Railway Returns*, 1870-1881
[427] *Funny Folks*, 26 October 26 1878, p.338
[428] *The Standard,* Wednesday 15 September 15, 1880
[429] Williams, *The London & South Western Railway, Volume 2*, p.48
[430] TNA, RAIL 411/281, Minutes of the Proceedings of the Half-Yearly General Meeting of proprietors of the London and South Western Railway, 14 February 1878
[431] Colin Chivers and Philip Wood, *Waterloo Circa 1900: An Illustrated Tour – South Western Circle Monograph No. 3*, (unknown, 2006), p.9
[432] TNA, RAIL 411/251, Traffic Committee Minute Book, Minute 422, 21 December 1881
[433] TNA, RAIL 411/247, Traffic Committee Minute Book, Minute 724, 17 October 1878

the period, it was only late in the decade that the directors seriously considered major investment to alleviate congestion problems.

It can be tentatively suggested that the directors' slowness to invest in capacity enhancements in the 1870s was because while the company could raise capital easily in this period, the majority of what it had raised was being allocated to the purchasing and building of lines. Indeed, between 1870 and 1879 £1.9 million was expended on 'lines open for traffic', while the construction and building lines cost much more at nearly £3 million.[434] Possibly indicative of the underinvestment in the company's infrastructure generally at the time, the LSWR's poor quality stations were particularly criticised in this period. In 1880 *Punch* commented that the directors must have been rabbit fanciers 'for the number of hutches scattered over their "system" is enormous.' However, 'these hutches are not for rabbits, but for humans, and they are technically known as "Country Stations."'[435] In 1876 *The Richmond and Twickenham Times* stated that the Hounslow loop line's accommodation was 'the vilest…found on any railway in England.'[436] Lord Onslow described Guildford's station as "one of the worst stations in England"[437] and in 1881 the Board of Trade felt compelled to commission a report on its deficient state.[438] Lastly, in 1877 a LSWR director, James Mangles, wrote to the Traffic Committee commenting on Iselworth Station's poor condition. Improvements were not undertaken because of the large upcoming, although unspecified, capital outlay.[439]

This evidence therefore cautiously suggests that within the company before 1884 there was poor strategic planning of its capital and operational requirements. Indeed, it is quite possible the directors lacked a clear understanding of why the company's profitability was falling. As discussed, in many cases they initiated the purchase of leased and worked lines because these were being operated at a loss. Yet, had they truly understood the cause of the company's excessive operating costs, inefficient train operations, capacity augmentations, not line acquisitions, may have been a better place to invest; although without more evidence this is conjecture. However, possibly indicating that the leasing and working of lines was not the

[434] TNA, RAIL 1110/281, LSWR Reports and Accounts, 1870-1879
[435] *Punch,* Saturday, 23 October 1880, p.189
[436] *Richmond and Twickenham Times*, 25 November 1876 *quoted in* Tim Sherwood, *The Railways of Richmond-Upon-Thames*, (London, 1992), p.25
[437] *Punch,* Saturday, October 23, 1880, pg. 189
[438] HCPP, Board of Trade, (260) Guildford Railway Station. Copy of a recent report of Major Marindin, R. E., on the subject of the condition of the railway station at Guildford., 24 March 1881 http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1881-057651 (8 December 2012)
[439] TNA, RAIL 411/245, Traffic Committee Minute Book, Minute 843, 22 February 1877

primary cause of the LSWR's diminished profitability before 1881, after 1885 the route mileage the company leased increased, while at the same time Scotter's reforms of the company's train services vastly improved the company's efficiency and financial performance (see Chapter 5).[440] This tentatively supports the argument made in Chapter 3 and above: that because in the 1870s the LSWR's board was increasingly unable to oversee the company's operational functions closely, and given they had little experience of railway management elsewhere in the industry, they could not gauge effectively its operational requirements.

Despite this, the inefficiency of the LSWR's train services after 1870 can, to a large extent, be attributed to Scott and other traffic managers' inability to adapt the company's train control practices, which had been established in the 1850s and 1860s, to accommodate its increasing traffic and more complex operational requirements. Evidence of this from inside the LSWR at the time is unavailable, but in the early-1880s Adams, the Locomotive Superintendent from 1878, used what he knew of how operational practices had developed in the wider British railway industry to frequently criticise those within the company. For example, in February 1883 he wrote to the Engineering Committee regarding locomotives' increased fuel usage. While he argued that numerous factors played a role, a major contributory cause was the Traffic Department's inefficient train operations. Firstly, drivers were directed not to sacrifice punctuality over fuel economy, presumably because of the criticism levelled at the company's services. Secondly, he had called the 'attention of the Traffic Department' for some time to the 'unnecessary haulage of vehicles.' He also considered that reducing trains' number of carriages to their lowest possible level should receive serious consideration as this would result in 'economy and increase the efficiency of the service.'[441] This and other[442] evidence suggests that the LSWR's methods of train management before 1881 were inefficient because of Scott's continued application of outdated practices. This was proven after 1885; under Scotter's leadership the LSWR's train mileage considerably reduced, improving company efficiency, while at the same time the reputation of its passenger services' rose (see Chapter 5).[443]

[440] TNA, RAIL 1110/281 and 283, London and South Western Railway Reports and Accounts 1831-1898, Half-Yearly reports
[441] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Statement of William Adams to Engineering Committee, 13 February 1883
[442] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Tyler (Superintendent of the Line) to Adams, 12 February 1882, p.344
[443] *The Times*, 14 Dec 1910, p.13; TNA, RAIL 411/255, Traffic Committee Minute Book, Minute 630, 11 November 1885; TNA, RAIL 411/255, Traffic Committee Minute Book, Minute 723, 6 January 1886; TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, 11 August 1886, Half Yearly meeting of the Proprietors, 8 August 1885, p.1

Rolling Stock

Between 1870 and 1881 the LSWR's expenditure was also raised by its rolling stock (wagons and carriages) building and procurement policies being managed in a manner that was incoherent, unplanned and, as Adams again showed, obsolete. Scott, who recommended the procurement and rebuilding of new rolling stock to the Traffic Committee (see Chapter 2), did not, or was not able to plan for the LSWR's long-term needs, and poorly managed what stock the company did have. Indeed, he seemingly did not appreciate the relationship, that many of his contemporaries understood, that existed between keeping the stock well maintained and the efficient working of the service.

The LSWR's wagon stock was inadequate to handle the goods traffic efficiently between 1870 and 1880. Over this period freight the company conveyed rose from 1,605,341 to 3,567,172 tons (90.88 percent). Yet, the average weight of goods carried per wagon per year also increased from 335 to 469 tons. In part this was because new wagons were introduced that had the capacity to carry ten tons; whereas previously most wagons' maximum was eight tons. Nevertheless, between 1870 and 1884 the LSWR only bought or constructed around 275 ten ton goods wagons,[444] out of a total stock of 7,502,[445] and, as such, this cannot be considered the main cause of the increased tonnage the wagons were hauling. Rather, each wagon was simply carrying more goods because Scott seemingly never planned the company's future rolling stock requirements and, as such, frequently lacked enough wagons to accommodate rising traffic levels. Indicative of this, between 1870 and 1880 the company had to hire 450 wagons from contractors, its own stock being insufficient. Most of these were returned by November 1880, but another 150 were hired between then and March 1881, costing £7 each per year.[446] This hiring of wagons conceivably raised company costs unnecessarily.

Additionally, between 1870 and 1881 the LSWR not only possessed insufficient wagons, the poor quality of those it did have also needlessly raised company expenditure. In 1883 Adams

[444] G.R.Weddell, *LSWR Carriages – Volume 4: Goods, Departmental Stock and Miscellaneous*, (Southampton, 2006), p.11-12

[445] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, Statement of Accounts for half-year ended 31 December 1884

[446] TNA, RAIL 411/239, Traffic Committee Minute Book, Minute 1452, 6 October 1870; TNA, RAIL 411/249, Traffic Committee Minute Book, Minute 177, 10 November 1880; RAIL 411/249, Traffic Committee Minute Book, Minute 1068, 2 March 1881

complained to the Engineering Committee that many wagons were of obsolete types[447] because the renewal rate had been low for 'many years past.' Consequently, many wagons, which should have been replaced with newer models in or before the 1870s, were of a 'weak and defective construction', meaning the cost of maintaining them was higher than it would have been for more modern types.[448] Indeed, between 1870 and 1880 the LSWR's average annual maintenance cost per wagon rose from £6.41 to £6.97 (£7.26).[449] But the obsolete nature of the wagon stock raised company costs in other ways. Adams stated that because the Carriage and Wagon works had a large number of 'crippled wagons' under repair at any one time, this meant fewer carriages could be maintained.[450] He claimed that if plans were adopted whereby wagons were replaced more readily, this would reduce their maintenance at the works, and that for every £1 he could save on maintaining them £3 could be possibly spent on the carriage stock.[451]

Scott also pursued policies that kept the LSWR's carriages in a poor state of repair between 1870 and 1881. Consequently, they were frequently complained about. In August 1878 one proprietor stated that the company's third-class accommodation was 'the most humiliating receptacles for human beings that he knew; except for perhaps coffins.'[452] William Acworth, a respected industry commentator, stated that before 1885 the majority of the LSWR's carriages were 'small and inconvenient.'[453]

This situation developed because Scott did not push for enough new carriages to be procured to keep pace with requirements. The strain on the LSWR's carriage stock, therefore, progressively increased after 1870. Between 1870 and 1880 the number of carriages the LSWR possessed grew from 1,266 to 1,543 (eighteen percent).[454] Yet, in a period when the company's carriages only increased in size to a small degree,[455] the average number of passengers each conveyed yearly rose from 10,575 to 19,633 (eighty-six percent).[456] Thus, in 1872[457] and 1883[458] it was reported to

[447] TNA, RAIL 411/470 Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report on Rolling Stock, 27 March 1883, p.11
[448] TNA, RAIL 411/470 Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report on Rolling Stock, 16 April 1883, p.5
[449] TNA, RAIL 1110/281-283, London and South Western Railway Reports and Accounts 1831-1898
[450] TNA, RAIL 411/470 Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report on Rolling Stock, 27 March 1883, p.11
[451] TNA, RAIL 411/470 Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report on Rolling Stock, 16 April 1883, p.5
[452] TNA, RAIL 1110/281, London and South Western Railway Reports and Accounts 1831-1879, Half-Yearly meeting of proprietors, 15 August 1878, p.4
[453] William Acworth, 'The South-Western Railway,' *Murray's Magazine*, 3 (1888, June), p.802
[454] Board of Trade, *Railway Returns 1870-1884*
[455] Weddell, *L.S.W.R. Carriages: Volume One 1838-1900*, p.57 and p.67
[456] Board of Trade, *Railway Returns 1870-1884*

the Traffic Committee that the company possessed insufficient carriages to handle the traffic. Furthermore, in November 1882 Adams commented that because there were insufficient carriages this was 'a great drawback to the efficient reparation of the stock.' He considered that particularly in busy periods, when more carriages were required, the works had to return some to traffic only partially repaired or without necessary repairs being done, which in the long-term increased maintenance costs.[459]

Additionally, Scott kept carriage renewal rates low between 1870 and 1881. Weddell, the leading historian of the LSWR's rolling stock, stated that the Traffic Committee, that was being advised by Scott, 'loathed to part' with older models.[460] For instance, in March 1873 a carriage inspector, Hills, wrote to Verrinder, the Assistant Superintendent of the Line, about 'Old Third Class Carriages with single doors' that were 'a very great abuse both to the company and the public.'[461] Indicative of Scott's approach of extending carriages' lives, Verrinder suggested to him this could be done by making them watertight and modernising them with extra doors. Scott agreed, but recommended to the Traffic Committee that the minimum be done to keep them in service: they were only made watertight and were re-painted.[462] Such resistance to modernising or replacing old carriages meant that between 1870 and 1877 the LSWR renewed on average only 1.1 percent of its stock annually; whereas other companies' renewal rate was between three and five percent. The result was that in March 1883 Adams reported that of the LSWR's 2,485 carriages, 1,379 were of obsolete types. He considered them 'very weak' and that their complicated construction significantly increased maintenance costs.[463] Indeed, between 1870 and 1880 the LSWR's cost of carriage maintenance per vehicle rose from £19.76 to £28.69 (£30.45); although, the extent to which changes in wage and maintenance cost contributed to this increase is unclear.[464]

Between 1870 and 1881 Scott's rolling stock procurement and renewal policies were to keep costs down in the short-term and to solve problems in an *ad hoc* manner when they arose. Yet, having experienced management practices in the wider British railway industry (see section 4),

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[457] Weddell, *L.S.W.R. Carriages: Volume One 1838-1900*, p.67
[458] TNA, RAIL 411/470 Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report on Rolling Stock, 27 March 1883, p.11
[459] TNA, RAIL 411/470 Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report on Carriage, 6 November 1882, p.3
[460] Weddell, *L.S.W.R. Carriages: Volume One 1838-1900*, p.112
[461] Hampshire Record Office [HRO], 104A02/A2/6, Hill to Verrinder, 31 March 1873
[462] HRO, 104A02/A2/6, Verrinder to Scott, 31 March 1873
[463] TNA, RAIL 411/470 Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report on Rolling Stock, 27 March 1883, p.11
[464] TNA, RAIL 1110/281-283, London and South Western Railway Reports and Accounts 1831-1898

Adams saw that in comparison Scott's approach was unsophisticated and backward. Adams recognised the links that existed between planning a company's future rolling stock needs, having enough rolling stock to facilitate its business, maintaining rolling stock in good order, and, ultimately, how these things promoted the service's efficient and economical working. Thus, he wrote frequently to directors complaining about the antiquated nature of Scott's methods of rolling stock management. For instance, in April 1883 he showed in a letter that of twelve major British railway companies only three, including the LSWR, had not adopted standard rolling stock renewal rates.[465] Those outside the LSWR also recognised that its rolling stock management was poor: the Board of Trade's report on the accident between Downton and Breamore, described in detail below, commented that the company's locomotives, stock and trains lacked any form of classification (see Section 4.18).[466]

Consequently, like many other parts of the LSWR's administration in the 1870s, Scott did not reform or modernise its rolling stock management practices to accommodate the increased complexity of the company's operations, harming its operational efficiency and profitability.

4.14. Locomotive stock during William Beattie's superintendency 1871-1877

The Traffic Department was not the only part of the company that was poorly and inefficiently run in 1870s. The Locomotive Department was also mismanaged by its superintendent between 1871 and 1877, William Beattie, the only LSWR senior manager between 1870 and 1911 who can be considered just simply incompetent. He was the son of the previous superintendent, Joseph, and was appointed because directors hoped he had inherited his father's talents.[467] Yet, his experience of locomotive design was minimal – he had been a draughtsman between 1862 and 1869 and then oversaw the company's hydraulic machinery until 1871 – and he was a hopeless manager.[468] Consequently, the Locomotive Department's management quality deteriorated during Beattie's tenure; yet, because the board's oversight of the departments' affairs was poor

[465] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence 1882-1884, William Adams to Frederick Macaulay, 27 March 1883, p.374
[466] HCCP, Board of Trade, [C.4122] Railway accident. Report by Colonel Rich, R.E., to the Board of Trade, upon the accident which occurred on the 3rd June 1884 between Downton and Breamore stations, on the London and South-Western Railway; and correspondence thereon. Henry G. Chalcraft to LSWR secretary, 25 July 1884, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1884-060828:5 (16 December 2011)
[467] Bradley, *LSWR Locomotives: The Early Engines 1838-53 and Beattie Classes*, p.6
[468] TNA, RAIL 411/492, Clerical staff character book No. 2, 1838-1919, p.62

in the 1870s and few directors had engineering experience (see Chapter 3) his failings went unnoticed until 1876.[469]

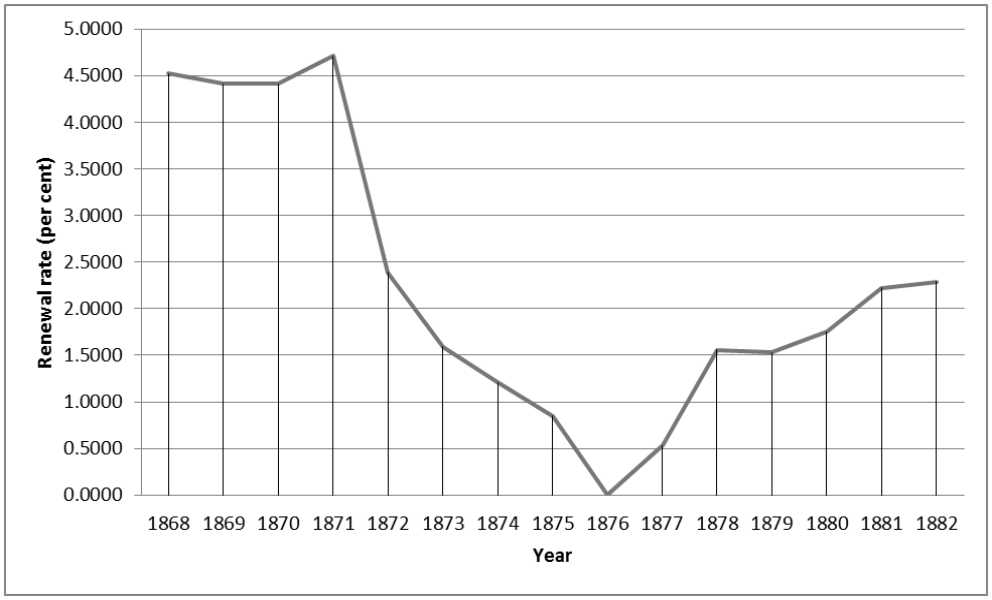

Figure 14: LSWR locomotives renewal rate 1868-1882, Source: TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Statement of Engine Stock, renewals of same and train Mileage during the past 14 years., Undated, p.59

Confronted with rising traffic levels, Beattie did not meet the company's motive power requirements adequately. This is shown by contrasting locomotive renewal and construction practices during his tenure with those employed by his successor, Adams. During Beattie's administration the LSWR on average renewed and built fewer locomotives than during Adams'. Between 1871 and 1877 the company added to stock on average 13.14 locomotives per year; whereas between 1880 and 1886 the figure was 20.00.[470] Furthermore, as Figure 14 shows, the LSWRs locomotive renewal rate fell from 4.71 percent in 1870 to zero in 1876; while on average only 1.09 percent of locomotives were renewed per year during Beattie's tenure; lower than the average rate during the early years of Adams' superintendency (1878 to 1882) of 1.76 percent. Consequently, in 1879 Adams thought the company possessed too few locomotives and those it did have were under 'excessive strain'. Indeed, LSWR locomotives ran on average 27,000 miles per annum, while those of other companies ran 17,700.[471] This 'excessive strain' raised departmental expenditure. In 1883, when Adams was still rectifying the Locomotive Department's mismanagement, he described how. When entering the shops for routine maintenance locomotives were, in his opinion, kept in longer than was necessary because of their poor state of repair. This put further strain on those still in service, meaning they in turn

[469] Bradley, *LSWR Locomotives: Early Engines*, p.5
[470] Curl, *The LSWR at Nine Elms*, p89 and p.331
[471] TNA, RAIL 411/221, Special Committee Minute Book, Special Committee upon Rolling Stock and Nine Elms Shops, 26 February 1879, p.238

required more maintenance when they entered the works, which raised the department's overall maintenance costs.[472]

The question then is why Beattie lowered the LSWR's locomotive renewal and procurement rate after 1871. Partially, this was because of factors beyond his control. In March 1883 Adams wrote that renewal rates fell between 1871 and 1877 because of high fuel and material costs.[473] Table 4 supports this statement, showing they did indeed rise in the period. Furthermore, locomotive construction and renewal were possibly curtailed in the 1870s because of the company's high capital spending on building and purchasing lines. Between 1870 and 1874 the LSWR's total capital expenditure on 'rolling stock' per train mile totalled 2.41d (2.29d), whereas between 1875 and 1879 the figure was 2.56d (2.54d). Yet, between 1880 and 1884, a period when the LSWR had purchased and built the majority of the lines it was going to, the figure rose to 2.99d (3.16). Thus, there were conceivably some constraints on Beattie's freedom to augment the LSWR's locomotive stock.

	1870	**1874**	**1878**	**1882**
Cost of Materials and Fuel Used for Operation as a proportion of Locomotive Department expenditure	52.92%	55.07%	44.60%	45.19%
Relative Cost of Materials and Fuel Used by the Locomotive Department per train mile (1870 = 100)	100	129.54	97.99	101.45

Table 4: Material costs as a proportion of Locomotive Department costs and per train mile relative to the cost in 1870 (100), Source: TNA, RAIL 1110/281 and 283, LSWR Reports and Accounts 1870-1898.

Nevertheless, despite these extenuating factors, locomotive building and renewal rates remained low between 1871 and 1877 because Beattie poorly responded to the LSWR's changing motive power needs. In January 1873 the Locomotive Committee asked him about locomotives for the new Lydford extension. Yet, he had given the matter little thought and was ordered to consult locomotive builders Beyer Peacock & Co as to suitable engines for the line.[474] Beattie's inadequate anticipation of the company's locomotive needs continued until the end of his tenure. In March 1878, only months after his appointment, Adams' pressed the Locomotive Committee for permission to purchase 'at the least 12 new bogie tank engines' to urgently meet the motive power requirements of the company's suburban services; the company having not

[472] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Adams to the Engineering Committee, 27 March 1883, p.4
[473] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Adams to the Engineering Committee, 27 March 1883, p.4
[474] Bradley, *LSWR Locomotives: The Early Engines*, p.175

had any tank engines constructed since 1875.[475] Thus, Beattie's inability to address the LSWR's motive power needs principally caused the 'excessive strain' on the existing locomotive stock, which, as Adams argued in 1879, damaged departmental 'efficiency and economy'.[476]

Bradley also argued that those locomotives Beattie did design were unsuitable for the LSWR's needs.[477] Initially, he perpetuated his father's 'small' locomotive designs. Their poor haulage power meant that the company's trains were slow and short in length at a time when passenger numbers were rising. Indeed, William Acworth stated that in the period the LSWR's locomotive stock had declined in quality and 'engines which had been in the van of progress, were mere pigmies by the side of the giants of the present time.'[478] Beattie did, however, order twenty heavy express locomotives in 1876. But a prototype was not built and because of design faults the class was considered an expensive failure.[479]

Beattie did not just inadequately manage locomotive matters, he also oversaw his subordinates poorly, increasing departmental costs. Between half-year ending December 1871 and December 1877, a period when the size of the company's locomotives did not increase to any marked degree, their fuel consumption per train mile rose from 26.9lbs to 32.2lbs.[480] While these levels of consumption were considerably less than on other southern railways,[481] it is noticeable that the increase began from the June 1872 half year; directly after Beattie's appointment as Locomotive Superintendent. This suggests that the oversight of drivers' and firemen's operational efficiency declined in quality during his superintendency.[482] This suggestion is supported by a letter to the Locomotive Committee from another William Beattie, Joseph's cousin and the Locomotive Department's Assistant Superintendent,[483] in 1881. In early-1880 he was drawn to the locomotives' excessive fuel usage over the previous ten years. In his opinion, while trains' augmented weight and speed was a factor, the cause was 'deeper than that'. In one year he found that despite the London District having twice the number of trains in steam daily than the other two districts, cases of excessive fuel usage were five times greater. He considered

[475] TNA, RAIL 411/469, Locomotives, boilers, rolling stock, etc: correspondence, 1868-1878, Adams to Locomotive Committee, 11 March 1878, p.744
[476] TNA, RAIL 411/221, Special Committee Minute Book, Special Committee upon Rolling Stock and Nine Elms Shops, 26 February 1879, p.238
[477] Bradley, *LSWR Locomotives: The Early Engines*, p.5-6
[478] Acworth, 'The South-Western Railway,' p.802
[479] Bradley, *LSWR Locomotives: The Early Engines*, p.5-6
[480] TNA, RAIL 411/470, Average consumption of fuel per train mile 71-81, 31 January 1882, p.6
[481] TNA, RAIL 411/469, Locomotives, boilers, rolling stock, etc: correspondence, 1868-1878, Consumption of fuel by locomotive Engines on the four southern Railways during the six years ending Dec 31 1876, January 1876, p.617
[482] TNA, RAIL 411/470, Average consumption of fuel per train mile 71-81, 31 January 1882, p.6
[483] *South Western Gazette*, September 1881, p.4

this was mostly attributable to poor oversight of drivers and firemen on the part of London District foremen; while the central and western district foremen acted with 'greater zeal and activity'.[484] This suggests that Winter's activities were not adequately overseen by Beattie and this in turn meant his inadequate supervision of the drivers and firemen under his charge was not identified. Their cases of excessive fuel usage went unchecked and, thus, raised departmental expenditure.

Beattie also poorly administered the Nine Elms locomotive works, meaning inefficiencies developed within them. Despite material costs falling absolutely between 1871 and 1877 (although as shown they did rise around 1874),[485] the entire cost of the Locomotive works per train mile increased from 8.23d (7.99d) to 9.38d (9.11d).[486] Adams, to improve their efficiency, had to extensively reorganise and reequip them. In 1879 he showed the Locomotive Committee around the works and stated that because he had introduced improved equipment and unskilled labour had replaced skilled in some places, piece work prices and foundry costs had been reduced. For example, expenditure on locomotive repairs reduced from 2.49d (2.51d) to 2.29d (2.42d) pence per train mile between December 1877 and December 1878.[487] Furthermore, the paucity of Beattie's management of the works is also possibly shown by the fact that in 1876 the company ceased constructing its own locomotives.[488]

In sum, between 1871 and 1877 Beattie's very poor management of the Locomotive Department contributed to excessively raising company costs. Indeed, as Chapter 5 shows, a decade passed before his mismanagement was fully rectified.

4.15. Why Scott and Beattie failed

Between 1870 and 1881 the LSWR's poor profitability was principally caused by the managerial failings of Scott and Beattie. They poorly anticipated the company's changing needs, persisted with using obsolete management techniques, and sought short-term cost reductions at the expense of long-term efficiencies. It will be argued that to some extent they continued to use such management techniques, which most of their contemporaries, such as Adams, would have

[484] TNA, RAIL 411/469, Locomotives, boilers, rolling stock, etc: correspondence, 1868-1878, Letter from William Beattie to Arthur, E. Guest, 31 January 1882, p.1
[485] Irving, 'The Profitability and Performance of British Railways,' p.49
[486] TNA, RAIL 1110/281 LSWR Reports and Accounts 1871-1877
[487] TNA, RAIL 411/221, Special Committee Minute Book, Special Committee upon Rolling Stock and Nine Elms Shops, 26 February 1879, p.238
[488] Curl, *The LSWR at Nine Elms*, p89 and p.331

considered inefficient, because they had little criticism of their actions from anyone above or below them in the hierarchy, and, thus, could manage their affairs as they saw fit.

The board had little capacity to critique Scott and Beattie's actions on three counts. Firstly, as discussed above, before 1881 it had responsibility for supervising and coordinating the company's departments, and the company lacked a senior official, such as modern chief executive, who was doing these things on a day-to-day basis. Scott and Beattie therefore reported directly to the board and committees. Yet, these only met fortnightly and, consequently, as the company's traffic and trade grew in the 1870s, and the directors were required to supervise an increasingly complex business, it is likely their ability to monitor the department heads' actions progressively waned. This is evidenced by the fact that, as Bradley argued, Beattie's inadequate management of the Locomotive Department went unidentified until 1877 because outwardly 'the Nine Elms works and the Locomotive Department appeared to be functioning normally.'[489] Indeed, the Way and Works Department scandal, described in Chapter 2, possibly suggests that as early as 1870 the directors were not adequately overseeing departmental operations; before the fraud was picked up on there was nothing to indicate to them that Strapp was inadequately overseeing activities within his department.[490]

Secondly, Chapter 3 described how in the 1870s most LSWR directors had few external business interests. Therefore, the likelihood is that they lacked knowledge of the management practices used in other railways or industries, and had limited capacity to critique Scott and Beattie's running of their departments. Indeed, it is probable most of them had learnt about railway management from within the LSWR. Indicative of this, the directors were only fully alerted to Scott and Beattie's shortcomings after 1878 when a new department head, Adams, who had experienced how other railways' were run, recognised the poor quality of the company's operating practices and pressed for reform (see Section 4). Lastly, the board members were also possibly blind to Scott and Beattie's failings as they had close and long-standing relationships with them. As Chapter 3 discussed, most of the directors had been with the company since the early 1850s. Thus, they had worked with Scott since that time, presumably meaning their working relationship with him was strong and they trusted his judgment. Additionally, the company's relationship with the Beattie family stretched back to 1837 when William's father, Joseph, was appointed to oversee the construction of the permanent way. Indeed, the mere fact the directors appointed William as Locomotive Superintendent, despite his lack of experience designing

[489] Bradley, *LSWR Locomotives: The Early Engines*, p.175
[490] Williams, R.A., *The London and South Western Railway*, Volume 2, p.302-3; TNA, RAIL 411/220, Special Committee on Permanent Way Department, 5 May 1870, p.19 and 30 June 1870, p.141

locomotives, suggests they did not want to break the company's ties to the family (indeed as shown William's cousin, another William, also worked for the company[491]). The directorate's close relationship with Beattie is further evidenced by the fact that a protégé of a Locomotive Committee member, who was a free-lance engineer, contributed to designing of the twenty locomotives that were failures.[492] These factors collectively meant that the directorate could not, and possibly would not, challenge Scott and Beattie's activities.

The company's traffic managers were also unable to effectively criticise Scott's policies. Most had spent their entire careers in within the LSWR's Traffic Department, or even one just part of it, as Chapter 3 showed, and they likely lacked the experience of how management practices had developed in the wider British railway industry. Consequently, given almost all of them had presumably learnt about railway management from within the LSWR, they were unable to effectively recognise how the management practices Scott was using were obsolete and inefficient. But even if they possessed such knowledge, the Traffic Department's promotional ladders encouraged deference to authority, meaning it is unlikely they would have questioned his decisions anyway. There was, therefore, nobody within the LSWR in the 1870s that had the relevant knowledge to recognise and challenge Scott and Beattie's inadequate, outdated and deficient management of their departments.

With little limiting their authority over their department's affairs, after 1870, it could be argued that by not improving the quality of the Traffic and Locomotive Department's operational practices Scott and Beattie were knowingly keeping them in an inefficient state. But there is no evidence for this. It is more likely they simply lacked the skills and knowledge to adapt them to cope efficiently with the challenge of the LSWR's increasing traffic and operational complexity. In Beattie's case, he was simply an individual who did not have the aptitude to perform his role efficiently, as Bradley argued.[493] Scott's lack of ability is evidenced by statements and actions that suggest he believed he could not improve the efficiency and quality of the company's train services further, despite Scotter's reforms after 1885 clearly proving that enhancements could have been made (see Chapter 5). In February 1878, in reference to Hounslow loop line delays, Dutton, who presumably was advised on train operations by Scott, mentioned that alterations to suburban services were impossible without diminishing the quality of those going to and from

[491] *South Western Gazette*, January 1882, p.2
[492] Bradley, L&SWR Locomotives: Early Engines, p.5
[493] Bradley, L&SWR Locomotives: Early Engines, p.5

the company's other districts.[494] Furthermore, Scott rarely satisfied requests for better services, whereas Scotter was regularly able to heed appeals for improvements. For instance, in May 1877 Scott rejected requests for new trains on the Epsom and Leatherhead, and Wimborne and Bournemouth West Lines, and for more trains to stop at St. Margarets Station.[495] This evidence, therefore, suggests that Scott had a limited understanding of how train services could be manipulated to better serve customers' needs.[496] Most damningly, in September 1879 Scott issued a circular asking all his subordinates, right down to station masters, how the company might reduce its train mileage. This implies that he lacked ideas about how to do this.[497] Therefore, it can be suggested that Scott was not wilfully managing the company's train services inefficiently; he just lacked the knowledge to manage them better than he already was.

Scott was not inherently a bad traffic manager; he had successfully reformed the Traffic Department's practices after his appointment in 1852.[498] Rather, having remained the department's head since that time, and without having worked elsewhere, it is presumed that up to the 1870s he had gained little experience or understanding of how railway administration had developed outside the LSWR. Consequently, with no knowledge on which he could draw on to effectively adapt the Traffic Department' operational practices to rising traffic levels, and with no criticism of his actions, the department's efficiency waned after 1870, significantly harming the company's financial performance.

In sum, the case of Scott and Beattie's poor management of the Traffic and Locomotive Departments between 1870 and 1881 further develops the thesis' main arguments. Firstly, the company's poor management quality in this period was partially the result of their actions being inadequately overseen and critiqued by those above them in the hierarchy. For numerous reasons, after 1870 the directors were not alert to the fact that the operational practices employed by Scott and Beattie were unsuitable for efficiently managing the company's increasingly complex operational requirements. This highlights that the LSWR's management quality and financial performance between 1870 and 1911 was to an extent reliant on the activities of the functional department heads, who had almost complete authority over their departments' affairs, being overseen and coordinated effectively.

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[494] TNA, RAIL 411/281, Minutes of the Proceedings of the Half-Yearly General Meeting of proprietors of the London and South Western Railway, 14 February 1878
[495] TNA. RAIL 411/245, Traffic Committee Minute Book, Minute 942a, 3 May 1877
[496] *Hampshire Telegraph and Sussex Chronicle etc*, Saturday, April 14, 1888; Issue 5573; *The Hampshire Advertiser*, Saturday, March 16, 1889, p.6, Issue 44624; *South Western Gazette*, March 1895, p.9
[497] TNA, RAIL 411/247, Traffic Committee Minute Book, Minute 1257, 4 September 1879
[498] Williams, *London and South Western Railway: Volume 1*, p.220-222

Secondly, Scott's case highlights that because a small group of senior individuals controlled the LSWR's policies and strategies between 1870 and 1911, if they occupied posts for considerable periods of time with little criticism of their actions from those above and below them in the hierarchy, their concepts of railway management practice could stagnate or become narrow over time, possibly resulting in the value of established practices not being frequently reappraised, possibly increasing company costs. Indeed, the LSWR's inefficiency after 1870 was largely caused by the fact that since 1852 Scott had been isolated from how management practice had developed in the wider British railway industry and, that because he had not been challenged to continually reform and update his knowledge and thinking, by the 1870s his beliefs on railway management had stagnated. Thus, the department's operating practices were not adapted or reformed to accommodate the company's rising traffic levels and inefficiencies developed within the department.

Section 4 – Operational matters, c.1881-1884

4.16. Scott's changing role

Between the late-1870s and early 1880s the directors increasingly realised, given the company's increasingly poor financial performance, they were unable to effectively monitor and coordinate the company's day-to-day operational affairs. After 1878 Scott's role therefore began to change as the board delegated more responsibilities to him, presumably hoping that by giving him more authority for overseeing and coordinating the company's operations he would be able to reduce its high operating costs. In 1878 the directors specified that he alone could make recommendations to them as to where investment in operational infrastructure should take place.[499] This gave him considerable power to decide how the company's infrastructure was adapted to cope with rising traffic levels. Furthermore, in 1881 Scott officially received a central position within the company's hierarchy with considerable responsibility for coordinating the different departments' activities and ensuring the company's overall financial success. Verrinder took over as head of the Traffic Department;[500] although it should be noted that Scott continued to play a considerable, perhaps excessive role in the department's day-to-day running.[501]

Despite these changes, between 1881 and 1884 the LSWR's financial position deteriorated further. In 1884 its OR reached its highest ever level of sixty percent; seven points above the

[499] TNA, RAIL 411/247, Traffic Committee Minute Book, Minute 830, 18 December 1878
[500] *The South Western Gazette*, December 1881, p.2
[501] *Railway Magazine*, May 1904, p.427

fifteen largest British companies' average. Additionally, while nine of the fifteen companies' ROCS increased between 1877 and 1882 (five year moving average), the LSWR's declined from 5.17 to 4.90 percent (see Chapter 1).[502] The LSWR's financial performance continued to diminish after 1881 for three principal reasons. Firstly, Scott did not reform the inefficient operating practices in the Traffic Department. Secondly, the actions of the company's department heads were still not coordinated or overseen effectively. Lastly, Scott and Adams, the Locomotive Superintendent from 1878, had incompatible and opposing philosophies on how railways should be managed, and, thus, the LSWR was seemingly unable to develop coherent operational strategies that could possibly have combatted some of its excessive expenditure. This section will describe these weaknesses in the company's management.

4.17. Traffic Operations

As section 4.13 discussed, between 1870 and around 1880, when traffic levels were increasing rapidly, investment in the LSWR's network capacity ran behind demand, which contributed to its main lines outside Waterloo Station being congested and its running costs increasing excessively. However, between 1881 and 1884 the LSWR took significant measures to augment the capacity of its main lines near London. Figure 15 shows that between 1880 and 1884 the LSWR's capital investment in its 'lines open for traffic' substantially increased, constituting £1,627,428 of the £3,976,567 spent in this period (forty-four percent). Much of the expenditure went on alleviating main line congestion; another extension of Waterloo Station was constructed between 1882 and 1885, adding six platforms,[503] and after 1880 extra tracks were added to the main lines outside the station. Indeed, Appendix 4.3 shows that between 1880 and 1885 the number of route miles the company possessed that had three or more tracks increased from five to fifteen.[504] It can be suggested that while the company was able to access capital with relative ease in this period, it increased its expenditure on infrastructure improvements because it was allocating less capital to purchasing lines that it leased or worked (Figure 4).[505]

[502] Board of Trade, *Railway Returns*, *1884*
[503] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, Half Yearly meeting of the Proprietors, 3 August 1882, p.1; Half Yearly meeting of the Proprietors, 6 August 1885, p.1
[504] Board of Trade, *Railway Returns 1878-1885*
[505] TNA, RAIL 1110/281 and 283, LSWR Reports and Accounts 1870-1884

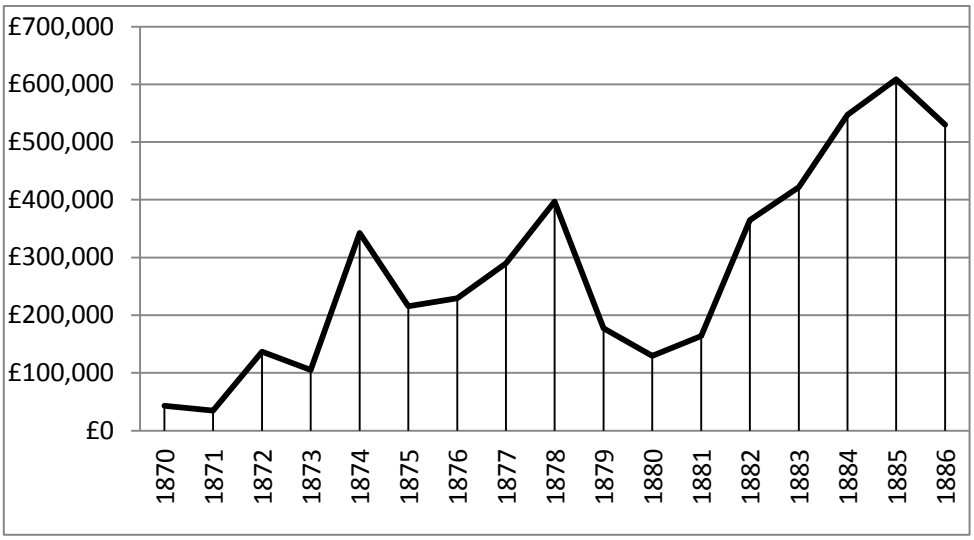

Figure 15: Capital spent on 'lines open for traffic', Source: TNA, RAIL 1110/281 and 283, LSWR Reports and Accounts 1870-1884

What was different about these projects was that whereas before 1878 the board had decided where and when infrastructure investments should be made, thereafter, as per the board's order of that year, Scott seemingly played a heightened role in determining these things. For instance, the directors had driven forward Waterloo's extension of 1878, with Scott overseeing the project and advising them.[506] Yet, Scott seemingly initiated the second extension. On 21 December 1881 he presented the Traffic Committee with Jacomb's (Resident Engineer) plans for increasing the station's accommodation 'which *he stated* would be required for the Traffic [italics added].' These were referred to the board and confirmed.[507] Furthermore, Scott led the project; in August 1882 he pressed urgently for two lines and platforms to be constructed at Waterloo to accommodate traffic, which was done,[508] and in late 1884 he successfully recommended to the Traffic Committee that the extension should not be opened 'until the new year'.[509] Possibly reflecting Scott's increased responsibility for managing infrastructure improvements, he also initiated the company's main line widenings; in October 1878 he presented to the Traffic Committee plans for a third lines between Surbiton and Malden and from Wimbledon to Clapham Junction[510]; while in April 1884, with work planned to expand the number of running lines between Clapham Junction and Barnes Stations, he presented further plans to widen them up to Queens Road Stations.[511]

[506] *Lloyd's Weekly Newspaper*, Sunday, 22 December 1878; TNA, RAIL 411/243, Traffic Committee Minute Book, Minute 1385, 26 August 1878; TNA, RAIL 411/247, Traffic Committee Minute Book, Minute 725, 17 October 1878; TNA, RAIL 411/247, Traffic Committee Minute Book, Minute 791, 27 November 1878;
[507] TNA, RAIL 411/251, Traffic Committee Minute Book, Minute 422, 21 December 1881; TNA, RAIL 411/7, Court of Directors Minute Book, Minute 220, 22 December 1881
[508] TNA, RAIL 411/251, Traffic Committee Minute Book, Minute 913, 17 August 1882
[509] TNA, RAIL 411/255. Traffic Committee Minute Book, Minute 13, 10 December 1884
[510] TNA, RAIL 411/247, Traffic Committee Minute Book, Minute 724, 17 October 1878
[511] TNA, RAIL 411/253, Traffic Committee Minute Book, Minute 879, 30 April 1884

Thus, Scott played a considerable part in directing the augmentation of the company's main line capacity after 1878. It can tentatively be suggested that because he had more input on where investment took place and how the work proceeded, the augmentations better served the requirements of the traffic. This is possibly why the expansion of Waterloo in 1878, which was orchestrated by the board, only added two platforms and was clearly insufficient for the company's requirements; while the expansion which opened in 1885, and which Scott had greater say over, added six platforms and considerably improved how many trains the station could handle.[512] But without more evidence this suggestion remains conjecture, and it could also be posited that the 1878 expansion was small because at the time the company was spending much of the capital it had raised on building and purchasing lines.

After 1881 criticism of the LSWR's train services intensified, with main line congestion and suburban services' lateness coming in for condemnation. The complaints culminated in fifteen letters published in *The Times* in October 1884. One commented that no company was 'so badly managed as the South-Western, nor is there any time table which is so purely the work of supposition.'[513] However, it is possible the congestion of train service congestion not only damaged the company's public profile, the Running Department's expenditure was also raised to an extent that cannot be simply explained by Adams introducing more powerful locomotives (see Section 4.21), possibly through trains' idling times increasing. Indeed, locomotives' fuel usage per train mile increased considerably between 1878 and 1884 from 32.8lbs to 41.8lbs (twenty-eight percent); while the Running Department's costs per train mile also rose from 6.32d (6.33d) to 6.83d (7.37d) at a time when coal prices were falling. [514]

Clearly, the LSWR was unable to reduce its train service congestion and inefficiency between 1881 and 1884. This was, partially, because those infrastructure augmentations designed to do this were not opened until after this date. Waterloo Station's extension was not fully inaugurated until 1885, while the company's main line widenings were only entirely completed in 1890 (Appendix 4.3). Nevertheless, there is good evidence that train service inefficiency was principally caused by Scott's continued use of train management practices that were unsuitable for a company of the LSWR's operational complexity and size. Firstly, as Section 3 observed, most of

[512] Chivers and Wood, *Waterloo Circa 1900: An Illustrated*, p.9
[513] David Turner, 'Public Opinion and Railway Managers - A Victorian Case Study,' TurnipRail Blog, 'http://turniprail.blogspot.com/2011/02/public-opinion-and-railway-managers.html,' (11 February 2011)
[514] TNA, RAIL , TNA, RAIL 411/182 and RAIL 411/184, Locomotive Committee Minute Books; TNA, RAIL 411/44 and RAIL 411/44, Engineering and Stores Committee Minute Books, various minutes

Adams' criticisms of the company's obsolete and inefficient train control practices were made between 1882 and 1884, evidencing that they were still in use at this time.[515] Secondly, and more seriously, in June 1884 a train derailed between Downton and Breamore; four people died and fifty-one were injured. The Board of Trade's subsequent report highlighted serious problems with the LSWR's train operations, most of which stemmed from obsolete practice. The inspector, Rich, stated that unlike most British railways no part of the LSWR's train services were classified; so rolling stock, locomotives' and drivers' suitability for running on different lines was not formally determined. He strongly suggested that 'the company make a thorough examination of their system and stock, to classify their drivers, to classify their stock, to classify their several lines and to classify their trains.' Writing on the company's services generally, he also referred to the 'violent shaking' that passengers experienced when travelling throughout the LSWR's network. He believed this was caused by bad driving, old stock and trains being improperly coupled.[516] Overall, Rich described a railway of the 1880s where train operating practices had not advanced for twenty years.

The company continued to employ obsolete and inefficient train control practices after 1881 for the same reasons as section 4.13 stated: Scott had considerable freedom of action because the LSWR's directors and his subordinates did not critique the operational practices he was employing. Nevertheless, in the early 1880s things changed. William Adams, the new locomotive superintendent, was the first senior company official for nearly thirty years to challenge how Scott managed his affairs.

4.19. William Adams

Scott never lost his authority over the LSWRs traffic matters before 1884. However, despite the board delegating to him responsibility for coordinating and directing department heads' activities in 1881, in the hope closer management of the company's functions would reduce its excessively high operating expenditure, as the railway's financial performance continued to decline they became progressively disenchanted with his antiquated perspectives on railway management and lost their trust in his ability to manage the whole concern effectively.

[515] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, various correspondence

[516] HCCP, Board of Trade, [C.4122] Railway accident. Report by Colonel Rich, R.E., to the Board of Trade, upon the accident which occurred on the 3rd June 1884 between Downton and Breamore stations, on the London and South-Western Railway; and correspondence thereon. Henry G. Chalcraft to LSWR secretary, 25 July 1884, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1884-060828:5 (16 December 2011)

The directors' growing dissatisfaction with Scott's thinking on railway management was underpinned by William Adams' appointment as Locomotive Superintendent in 1878. Previously, Adams had been the North London (1855-1873) and Great Eastern Railways' (1873-1878) Locomotive Superintendent.[517] Thus, by drawing on his knowledge of how railways were run in the wider British industry, he considerably improved the Locomotive Department's efficiency and reduced its cost per train mile from 13.38d (13.10d) in 1877 to 11.23d (12.12d) by 1884.[518]

Adams began by reversing the under-investment in the LSWR's locomotive stock that had occurred since 1870 and improved its suitability for the company's needs. In 1881 the locomotive renewal rate was increased to 2.22 percent yearly, whereas for the previous eight years the figure had never been greater than 1.75 percent.[519] Furthermore, the eighty-nine locomotives he introduced between 1878 and August 1883 were larger, more powerful and better suited to the LSWR's needs than any William Beattie had designed. Fay described them as 'a great advance upon previous South-Western practice and are fully able to cope with the heaviest traffic.'[520] Also, the later Beattie classes, including the twenty failed locomotives, were considerably rebuilt to improve their efficiency.[521] Consequently, because the LSWR's locomotive stock was augmented and its standard raised, the excessive strain on it, which as shown was the result of the company possessing too few locomotives, was reduced; the average yearly train mileage LSWR locomotives ran dropped from 24,309 miles in 1881 to 22,323 miles in 1884, the lowest this figure had been since 1870.[522]

The main drawback of the new locomotives was that, combined with the inefficiency of the company's timetables, they raised the Locomotive Department's fuel usage and expenditure at a time when the price it was paying for fuel fell from 14.43 shillings per ton in 1878 to 12.78 shillings in 1884.[523] In 1876 the company's locomotives used 29.4lbs per train mile. However, by 1882 this had risen to 33.2lb and by 1884 it had reached 41.8lbs.[524] Consequently, fuel costs as a

[517] Bradley, *LSWR Locomotives: The Adams Classes*, p.4
[518] TNA, RAIL 1110/281 and 283, London and South Western Railway Reports and Accounts 1831-1898, Half-Yearly reports
[519] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Statement of Engine Stock, renewals of same and train Mileage during the past 14 years., Undated, p.59
[520] Fay, *The Royal Road*, p.128
[521] Bradley, *LSWR Locomotives: The Adams Classes*, p.4
[522] Board of Trade, *Railway Returns, 1870-1886*
[523] RAIL 1110/281 and 283, London and South Western Railway Reports and Accounts 1831-1898, Half-Yearly reports
[524] TNA, RAIL , TNA, RAIL 411/182 and RAIL 411/184, Locomotive Committee Minute Books; TNA, RAIL 411/44 and RAIL 411/44, Engineering and Stores Committee Minute Books, various minutes

proportion of departmental expenditure increased over the period from 30.60 percent to 33.36 percent between 1878 and 1884.[525]

The locomotive works expenditure was also reduced after 1878. After a slight increase in locomotive repairs and renewals costs between then and 1881, from 3.05d (2.99d) to 3.21d (3.38d), the cost thereafter fell to 2.76d (3.00d) in 1884. It can be suggested that this decrease can partially be attributed to Adams' new locomotives reducing departmental maintenance costs. In 1879 he had mentioned that because LSWR locomotives' yearly mileage was high, this put them under excessive strain and raised maintenance costs when they came into the works (see section 4.15).[526] Thus, by increasing the number of locomotives the company possessed, it meant repairs to the stock could be made in a timelier manner and less stress was placed on those still in service. Moreover, Adams successfully pushed for the rebuilding, reorganising and re-equipping of many parts of the Nine Elms works. [527] In February 1879 the Locomotive Committee toured them and noted that since February 1878 improvements in working practices had reduced costs; with locomotive repairs declining from 2.49 to 2.29 pence train per mile between December 1877 and December 1878. Additionally, Adams suggested that savings would be made if the company started rebuilding its own boilers, although whether this went ahead is unclear.[528] Lastly, in 1883 the LSWR employed Edward Frankland – the noted railway chemist – to test the materials used in company's lubricants and paints with the goal of acquiring the best quality and most cost efficient products.[529] Indeed, from 21 November 1883 an 'Analysis of Stores' report book was regularly presented to the Engineering and Stores Committee, suggesting regular chemical analysis of the company's materials was being undertaken – whereas previously it had not been.[530]

In sum, the company Adams came to in 1878 was, in terms of its operating practices, isolated within the British railway industry. Prior to then the directors' external business interests or personal experience of the railway did not provide them with the skills or knowledge to

[525] TNA, RAIL 1110/281 and TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1870-1884
[526] TNA, RAIL 411/221, Special Committee Minute Book, Special Committee upon Rolling Stock and Nine Elms Shops, 26 February 1879, p.238
[527] Bradley, *LSWR Locomotives: The Adams Classes,* p.4
[528] TNA, RAIL 411/221, Special Committee Minute Book, Special Committee upon Rolling Stock and Nine Elms Shops, 26 February 1879, p.238
[529] Colin A. Russell and John A. Hudson, *Early Railway Chemistry and its Legacy*, (Cambridge, 2012), p.68; TNA, RAIL 411/43, Engineering and Stores Committee, Minute 137, 11 April 1883; TNA, RAIL 411/43, Engineering and Stores Committee, Minute 226, 9 May 1883; TNA, RAIL 411/43, Engineering and Stores Committee, Minute 282, 23 May 1883; TNA, RAIL 411/43, Engineering and Stores Committee, Minute 582, 16 August 1883; TNA, RAIL 411/43, Engineering and Stores Committee, Minutes 813-815, 10 October 1883
[530] TNA, RAIL 411/43, Engineering and Stores Committee, 21 November 1883

adequately oversee or understand fully the Locomotive Department's operations (see Chapter 3). Furthermore, given that Beattie had succeeded his father, who had been the company's Locomotive Superintendent since 1850, this possibly allowed for antiquated norms of management practice within the department to embed deeply. The likelihood was, therefore, that only an individual who was appointed from outside the company, and who had knowledge of developments in management practice elsewhere in the British railway industry, could successfully identify where within the Locomotive Department efficiencies could be found and managerial improvements could be made. Adams was just such a man, and in only six years he considerably improved the Locomotive Department's management quality and efficiency.

Adams' case therefore supports one of this thesis' major arguments; because only a small number of senior individuals had the power to influence the LSWR's strategic course and policies between 1870 and 1911, and given the company's own senior managers rarely developed new or innovative management or operational techniques, advancement was reliant on new senior managers joining the company who had worked in other railways.

4.20. Scott verses Adams

Despite Adams improving the Locomotive Department's efficiency before 1884, he did not enact all the reforms he desired. This was because his thinking on two significant aspects of railway management, rolling stock and operational policy, was fundamentally different to Scott's. Having acquired knowledge of how management practice had developed in the wider British railway industry,[531] Adams applied modern, planned and systematic approaches to the management of the Locomotive Department. Conversely, as sections 4.14 and 4.18 argued, the management practices utilised by Scott, who had worked for the LSWR since 1852 and likely had little practical experience of how railway management had developed outside the company, lacked such sophistication. His approach, which was antiquated by the 1880s, was to reduce cost where possible and solve problems in an *ad hoc* manner when they arose. Consequently, while Adams and Scott had common views on some policies, there were more areas where their opinions differed and so they came into conflict over policy. The evidence also suggests that after 1881 their relationship was not improved by the fact that Scott tried to get involved in the detail of the Locomotive Department's management and, thus, possibly interfered too much in Adams' business for his liking.[532]

[531] Bradley, *LSWR Locomotives: The Adams Classes*, p.4
[532] HRO, 104A02/A2/12, Locomotive and Stores Committee, Minute 1200, 20 November 1882*; Railway Magazine*, May 1904, p.427; TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence,

The most notable dispute between Scott and Adams was over rolling stock policy. On appointment, Adams looked to end the lack of forward planning in rolling stock and locomotive renewal and procurement policies. Bradley argued that he quickly investigated the Locomotive Department's 'short and long-term requirements'[533] and he pushed the directors for standard locomotive, carriage and wagon renewal rates which, while common throughout the railway industry, the LSWR lacked. [534] For example, by the 1880s he was replacing old carriages with improved designs when they came into the shops and in 1881 Dutton stated that 'nothing but the best carriages'[535] were being built, while Fay wrote that new carriages would 'bear comparison with any in the country'.[536] Nevertheless, the company's carriage renewal rate actually fell between 1878 and 1882 to an average of 0.87 percent per year.[537] The Traffic Committee, presumably acting in line with Scott's established perspective of extending carriages' lives, denied Adams request in March 1883 for a higher rate of four percent per annum, which he suggested would, as Section 3 described, reduce maintenance costs in the long-term. Nevertheless, after much debate, in mid-1884 the Traffic Committee came around to Adams' perspective and agreed to the scrapping and renewal of passenger stock more readily.[538] Also, Section 4.14 showed that in the 1880s Adams frequently criticised the manner in which the Traffic Department organised the company's train services. In his opinion the Locomotive Department's expenditure was unnecessarily raised through trains' excessive mileage and the fact that the company's locomotives were doing much more work yearly than those of other railways, meaning that the repairs they had to undergo when entering the shops for maintenance were needlessly heavy.[539] The likelihood is that Scott and traffic officials did not appreciate such criticism on top of that they were already receiving from the travelling public.

1882-1884, Statement of William Adams to Engineering Committee, 5 January 1884; TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Letter from William Adams to the Engineering Committee, 1 June 1883

[533] Bradley, D.L., *LSWR Locomotives: The Adams Classes,* (Didcot, 1985), p.4

[534] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence 1882-1884, William Adams to Frederick Macaulay, 27 March 1883, p.374

[535] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, Half-Yearly meeting of proprietors, 15 February 1881, p.5

[536] Fay, *The Royal Road*, p.129

[537] TNA, RAIL 411/470 Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report on Rolling Stock, 27 March 1883, p.4

[538] Weddell, *L.S.W.R. Carriages – Volume 1,* p.112

[539] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Adams to the Engineering Committee, 27 March 1883; TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Statement of William Adams to Engineering Committee, 13 February 1883

4.21. The directors and the disputes

Adams and Scott's opinions on important areas of the company's operational policies were at odds between 1881 and 1884, and they both attempted to gain support for their perspectives from directors who had little, if any, knowledge of railway engineering or management (see Chapter 3). Indeed, as the company's profitability continued to decline after 1881, and as Adams increasingly challenged its established, but inefficient practices, the board increasingly came to favour his opinions over Scott's on many matters. Thus, the LSWR lacked strong leadership between 1881 and 1884, and this is possibly why it never developed an overarching corporate strategy to counter its excessive costs.

Initially the directors favoured Scott's opinions on operational policies, presumably given he had been the company's chief official since 1852. Indeed, his objections to Adams' proposals – for example in the case of rolling stock renewal rates – meant that by 1884 Adams had not managed to modernise the Locomotive Department's management or rolling stock policies to the extent he wished to.

But by 1882 the directorate, and particularly the Locomotive Committee who Adams reported directly to, increasingly favoured his opinions on matters of policy over Scott's views or in contrary to established operating practices. For instance, in late-1882, after finding some carriages running in a particularly poor state of repair, Scott suggested that a new carriage superintendent should be introduced under Adams to improve oversight within the department. Yet, the Engineering Committee sided with Adams' view that the carriage works should be extended and rearranged. Possibly indicative of Scott's waning authority in the company, he became frustrated and caustically suggested that the directors had a 'view to prevent practical results…and put out of sight the present question of expense.'[540] Also, Scott's views on carriage and wagon renewal rates had fallen out of favour with the directors by his retirement, as discussed, and by 1884 the company had adopted Adams' suggestions.[541] Furthermore, while Scott had favoured extending carriages lives as much as possible, the LSWR began procuring and building a considerable number of new ones after 1880. Between 1875 and 1880 the number of the carriages the company possessed decreased from 1,548 to 1,543; yet by 1885 the number had risen to 1,929, an increase of 25.02 percent.

[540] HRO, 104A02/A2/12, Locomotive and Stores Committee, Minute 1200, 20 November 1882
[541] Weddell, *L.S.W.R. Carriages – Volume 1,* p.112

Therefore, despite Scott theoretically being given responsibility for overseeing and coordinating the department heads' activities in 1881, this evidence suggests that in practice he never gained authority over Adams' actions. Thus, Adams' case gives weight to Bonavia's argument that in companies that utilised functional department structures department heads could undermine the General Manager's authority because they had direct contact with directors through the committees and could influence their decisions.[542]

The directors' increasing support for Adams' opinions on policy was, however, just one of many indicators that suggest their trust in Scott's ability to efficiently manage the company's operations was decreasing. Possibly because Adams gave them an awareness of how the company's operations were managed poorly, after 1881 some directors probed why expenditure was so high. For instance, in 1882 Beach questioned the company's excessive spending in the previous half-year,[543] while in February 1883 Mortimer raised the same concern, and the matter was discussed over seven board meetings.[544] This heightened interest in the company's poor cost position soon led the directors to become more active in its day-to-day running. In April 1883 a Special Committee specified that the Traffic and Engineering Committees should monitor very closely any alterations or additions to stations and rolling stock.[545] In July 1884 the board increased their monitoring of company expenditure by ordering that all spending be based on estimates presented to it at the end of every half-year.[546] Lastly, in late 1884 the Locomotive Committee began fortnightly inspections of Locomotive, Carriage and Wagon works.[547] Therefore, while Scott was not officially stripped of his responsibilities for supervising and harmonizing the whole of the company's operations before 1884, it would seem the directors felt the need to reassert some of their authority to make good his deficiencies.

There were numerous reasons why Scott's authority within the company waned after 1881. Adams' appointment was almost certainly a major factor. Chapter 3 highlighted that the LSWR's directors had little, if any, experience of railway management outside the company in this period. As such, Adams' criticisms of the company's established operational practices, based on his knowledge of how other railways were operated, would possibly have been the first time the directorate was exposed to the reality that Scott's management of traffic matters was inefficient

[542] Bonavia, *The Organisation of British Railways*, p.17-18
[543] TNA, RAIL 411/7, Court of Directors Minute Book, Minute 285, 2 February 1882
[544] TNA, RAIL 411/7, Court of Directors Minute Book, Minute 844, 15 February 1883 to Minute 915, 11 April 1883
[545] TNA, RAIL 411/221, Special Committee Minute Book, Special Committee on the arrangements of the business of the Traffic and Engineering Committees, 11 April 1883, p.332
[546] Court of Directors Minute Book, Minute 1431, 10 July 1884
[547] HRO, 104A02/A2/15, Engineering and Stores Committee, Minute No. 1200, 26th November 1884

and causing the company's poor financial performance. Furthermore, because many new directors had joined the company in the late-1870s and early 1880s, they were possibly more receptive to Adams' criticisms of its established operating practices than their predecessors. Many of the directors they replaced had worked with Scott since the 1850s and had built up strong working relationships with him. Thus, as section 4.15 showed, they seemingly trusted his judgment. However, because the new directors had only worked with Scott for a short time, and did not have a long-standing connection with him, they were evidently far less willing to automatically favour his philosophies of railway management in light of Adams' criticisms. Therefore, while scholars such as Channon and Irving focussed on how directors' external business interests may have influenced nineteenth-century railways' policies,[548] this section has shown that the length of individuals' directorships, the nature of their working relationships with senior officials, and the level of turnover amongst directors could also influence companies' management quality.

Scott's loss of authority had serious implications for the LSWR's financial performance after 1881. There was no individual within the organisation that had the authority to provide the company with strong leadership, who could get the department heads working together towards common goals or could provide organisation with a coherent strategy to bring down its excessive expenditure. Indeed, as Section 3 showed, the board were unable to coordinate and oversee the company's functions effectively; while Adams' responsibilities only covered the locomotive and rolling stock matters. The LSWR's management between 1881 and 1884 can be labelled 'incoherent,' and this is demonstrated by one policy Adams enacted which unexpectedly raised the Engineering Department's expenditure.

4.22. Heavy locomotives

As Section 4.19 discussed, between 1878 and 1883 Adams introduced eighty-nine larger and heavier locomotives to address the deficiencies in the company's engine stock.[549] These locomotives did, however, increase the rate of wear on the company's tracks; something that seemingly took Jacomb, the Resident Engineer (head of the Engineering Department), by surprise. In August 1883 Adams wrote to the Engineering Committee stating that Jacomb had mentioned to him that since 1878 track renewal rates had increased from sixty to ninety miles

[548] Channon, *Railways in Britain and the United States, 1830-1940*, p.179-192; Irving, *The North Eastern Railway Company*, p.131-138
[549] Fay, *The Royal Road*, p.128; Bradley, *LSWR Locomotives: The Adams Classes*, p.4

per annum and that the greatest wear was where the new locomotives operated.[550] It also can be plausibly suggested the increased wear on the company's tracks eventually imperilled the company's safe operation. The accident between Downton and Breamore of June 1884 was principally caused by the track being too weak to support two locomotives moving at speed.[551]

The Engineering Committee and Department reacted quickly to enable the track to withstand the new locomotives more efficiently. Firstly, the network's track weight was gradually increased[552] to 80lbs per yard.[553] Furthermore, to better plan and manage the cost of renewals, any extra renewals above the ninety miles per year[554] were charged against a 'renewal suspense account.'[555] By 1885 the Engineering Committee was also monitoring track maintenance more closely, and received fortnightly returns of the mileage renewed. Lastly, the Engineering Department negotiated more advantageous contracts for materials to reduce expenditure.[556] These emergency measures possibly raised company costs in the short and long-term. Expenditure on track renewals in 1876 (the last year such information was recorded independently in the company's accounts) was £63,240 (£61,925), twenty-five percent of departmental costs; while Jacomb's estimate of the cost in 1884 was £98,600 (£106,406), which, if accurate, constituted thirty-two percent of departmental expenditure.[557] Furthermore, between 1879 and 1884 departmental expenditure per track mile rose from £383 (£405) to £430 (£464) (12.29 percent). However, it should be recognised that the extent to which these increases were influenced by changes in the price of materials is unclear.

The unexpected and excessive wear on the company's tracks Adams' new locomotives caused was, fundamentally, the result of insufficient coordination of, and communication between, the LSWR's department heads. Indeed, because after 1881 Adams lacked effective oversight of his actions from an authoritative General Manager, and given that the directors supported his

[550] TNA, RAIL 411/470, Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report from William Adams to Wyndham S. Portal on 'Heavy engines,' 25 August 1883, p.585
[551] HCCP, Board of Trade, [C.4122] Railway accident. Report by Colonel Rich, R.E., to the Board of Trade, upon the accident which occurred on the 3rd June 1884 between Downton and Breamore stations, on the London and South-Western Railway; and correspondence thereon. Henry G. Chalcraft to LSWR secretary, 25 July 1884, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1884-060828:5 (16 December 2011)
[552] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, Report of the Annual General Meeting for the Half-Year Ended 31 December 1883, p.8
[553] TNA, RAIL 411/46, Engineering Committee, Minute No. 1261, 24 January 1894
[554] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, Report of the Annual General Meeting for the Half-Year Ended 31 December 1883, p.8
[555] TNA, RAIL 411/44, Engineering and Stores Committee Minute Book, Minute No.162, 17 June 1884
[556] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, Report and Statement of Accounts for the Half-Year Ended 31 December 1883, p.1
[557] TNA, RAIL 1110/281 London and South Western Railway Reports and Accounts, 1876; TNA, RAIL 411/43, Engineering and Stores Committee Minute Book, Minute No.1 232, 9 January 1884

position on many policies, he had the freedom to build new locomotives without reference to how they may have raised the Engineering Department's costs. This case was therefore symptomatic of the poor leadership the LSWR received between 1881 and 1884, which will now be discussed.

4.23. The disparate LSWR

To a large extent, the LSWR's deteriorating profitability between 1881 and 1884 was caused by the poor operating practices Scott continued using in the Traffic Department (see section 4.17). However, what this section has importantly shown is that the relationship dynamics of those at the head of the LSWR significantly influenced its overall management quality and, consequently, contributed to the company's poor financial performance. The evidence suggests that in the period the company's two most influential senior managers possessed opposing and incompatible approaches to railway management. Scott's antiquated approach was to reduce cost in the short-term and solve problems in an *ad hoc* manner as they arose. Conversely, Adams possessed a systematic approach to management where long-term planning for the company's future requirements was the key. The incompatibility of their management philosophies meant they conflicted over numerous areas of policy where their interests overlapped and, more seriously, the LSWR seemingly never attempted to develop a coherent strategy that may have brought down its excessive expenditure.

The case of the LSWR's management between 1881 and 1884 therefore gives weight to Bonavia's argument that in railways that used functional department structures, department heads, who had considerable, if not complete authority over their own fiefdoms, could come into conflict in ways that damaged companies' financial performance. Nevertheless, his argument needs some modification. He focussed on disagreements between railways' officials that arose because of their differing day-to-day concerns. For instance, Traffic Departments needed variable numbers of locomotives at different times of the year, while Locomotive Departments needed to plan when the locomotive stock was maintained evenly so as not to overwhelm the works or render them idle.[558] While this form of conflict has been shown to have existed within the LSWR before 1884, Scott and Adams' clashed over policy for another reason: their philosophies of railway management were unalike because of their differing employment experiences, backgrounds and the length of the time they had been with company. Indeed, the LSWR's case suggests that senior

[558] Bonavia, *The Organisation of British Railways,* p.17-18 and p.153-154; Channon, *Railways in Britain and the United States, 1830-1940*, p.42

managers' differing management philosophies, which may arise from a new department head joining the railway from an external source, could potentially have been more damaging to companies' performance than the disagreements Bonavia considered. In cases he described where department heads disputed when locomotives would enter the works, it is likely a settlement could be arranged so that both branches of the company would still operate relatively smoothly. But as Adams and Scott's disagreements show, where senior officials' fundamental beliefs about railway management were at odds this could severely impinge on a company's ability to develop coherent responses to the challenges they faced. Consequently, given that most British railways possessed functional department structures between 1870 and 1914, future academics must consider how companies' management quality and financial performance were shaped by the compatibility of senior officials' management philosophies, rather than simply analysing what their immediate operational concerns were.

Most importantly, the findings of this section develop one of the two chief arguments of this thesis: because between 1870 and 1911 LSWR department heads had almost absolute authority within their fiefdoms, the effectiveness of the company's management and, consequently, much of its profitability, was dependent on how effectively their actions were coordinated and overseen by those above them in the hierarchy: the General Manager and the directors. Indeed, Adams and Scott came into conflict because no individual or body within the LSWR was able to negotiate between them, get them working together or give the company a strategic direction to which they had to shape their policies. In short, between 1881 and 1884 the LSWR lacked effective leadership, and its case gives weight to Channon's suggestion that the operational effectiveness of railways that possessed functional structures was dependent on a General Manager's 'authority, skill and energy' to persuade department heads to cooperate.[559]

The case of the LSWR's management between 1881 and 1884 also reveals something about the nature of the relationship between directors and senior managers in nineteenth-century British railways. Essentially the LSWR's directorate in this period was responsible for creating the disputes between Scott and Adams, and the subsequent lack of operational cohesion within the company. Scott had been given the responsibility for coordinating and overseeing the department heads' activities in 1881. Yet, his authority within the company waned thereafter because the board shifted its allegiance away from his philosophies of railway management towards Adams'. Thus, while it is unlikely Scott had the knowledge or ability to transform the General Manager's position into something akin to modern chief executive, as Scotter did from

[559] Channon, *Railways in Britain and the United States, 1830-1940*, p.42

1885, he was never realistically given opportunity or authority to do this by the directors. This led to the activities of the company's departments being largely uncoordinated. This case therefore suggests that because within the majority of nineteenth-century British railways only a small number of individuals had decision-making authority, their management quality and operational cohesiveness could still be highly dependent on which senior managers' opinions on policy the directorate favoured. Indeed, as the LSWR's example shows, the official with the directors' favour may not, necessarily, have been the General Manager.

Section 5 - Conclusion

By demonstrating that numerous factors influenced the LSWR's poor financial performance between 1870 and 1884 this chapter contributed to debates surrounding the causes of the British railway industry's declining profitability between 1870 and 1914.

While it was shown that wage increases and growth in high-volume, low-margin passenger traffic did affect the LSWR's profitability between 1870 and 1884, principally its financial performance was determined by the quality of the decisions its directors and senior officials made. The chapter's first section described how the LSWR's directors added routes to the company's network when its regional hegemony was threatened and purchased lines it leased or worked as the opportunity arose. However, many of these lines were poor performers financially, and, therefore, this chapter attempted to determine why the directors made such investments.

Fundamentally, the board had considerable scope to invest where they saw fit. Despite the LSWR's profitability being poor after 1870 relative to the largest British railway companies', it made enough profit to satisfy shareholders and external financial markets. Thus, the shareholders were largely passive in the company's decision-making processes and it could raise capital with relative ease. Additionally, the company's constant traffic growth since the 1830s led decision-makers to believe this would continue and that all investments would be worthwhile in the long-run. Thus, because their actions were not constrained by these factors, the LSWR directors developed no detailed strategies or project appraisal to guide their investments. Rather, they were far more inclined to make decisions on the basis of 'gut-feeling', the circumstances they were immediately presented with and, in the case of the extension of lines into the West Country, their own competitive aims. For example, with regard to the purchase of lines the company leased or worked, the directors only possessed the vague goals of consolidating the company's network, eliminating unfavourable working agreements and removing unstable partners. They did not, however, consider alternative strategies to acquisition that possibly

would have been more cost-effective. Additionally, the board also built lines to protect the LSWR's territorial dominance. In many cases they had been reluctant to build into some territories because they suspected – rightfully in many cases – that lines through them would not pay. Nonetheless, when faced with the company's territorial hegemony being challenged they overrode these concerns and built the routes anyway, likely thinking that if they underperformed they could be cross-subsidised by profitable lines for years or even decades after they opened.

Therefore, between 1870 and 1884 the LSWR directors' invested in lines for reasons other than profit-maximisation, as Aldcroft, Casson, and Dodgson argued occurred generally within the British railway industry before 1900.[560] Nevertheless, this chapter has suggested that the effect these capital investments had on the LSWR's overall financial performance was small compared with the major impact that its deficient management had; a finding that supports Gourvish and Hodgkins' arguments that network extensions that performed poorly did not significantly impact on British railways' profitability after 1870.[561]

Chiefly, this chapter has argued that the LSWR's poor profitability and ROCS between 1870 and 1884 was caused by deficiencies in the company's management. This case therefore supports Arnold, McCartney, Crafts, Mills, Mulatu and others' arguments that between 1870 and 1914 British railways' management quality was the prime determinant of their financial performance.[562] Through making this argument the chapter has also developed this thesis' two principal arguments.

Section 3 and 4 argued that in the 1870s and early 1880s the LSWR's excessive running costs and, thus, its poor financial performance was primarily the result of Scott's obsolete management of train control and rolling stock matters. Scott was allowed to persist with using such management practices because there was little constraining his freedom of action. The LSWR's directors placed him under little such pressure; they had worked with him for decades and presumably trusted his judgement. Most importantly, they had little practical experience of railway or industrial management outside the company and it is unlikely they had the knowledge to criticise his

[560] Dodgson, 'New, disaggregated, British railway total factor productivity growth estimates, 1875 to 1912'p.639; [560] Casson, *The world's first railway system*, p.17; Aldcroft, *British Railways in Transition*, p.9-15
[561] Gourvish, 'The Performance of British Railway Management after 1860, p.198; Hodgkins, *The Second Railway King*, p.639
[562] Gourvish, 'The Performance of British Railway Management after 1860, p.198; Arnold, and McCartney 'Rates of return', p.56; Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig, and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632

actions (see Chapter 3). This chapter has therefore done what Channon and Hughes' studies of the GWR and LNER's directors did not,[563] it has demonstrated how the external business activities, or lack thereof, of one railway company's directors may have influenced its management quality. Moreover, almost none of the LSWR's traffic managers had worked outside the section of the Traffic Department that had recruited them and, consequently, they would have had little opportunity to acquire knowledge that would have enabled them to criticise Scott's actions. Furthermore, even if they had possessed such knowledge, the company's promotional ladders promoted deference to authority and meant they lacked the position in the organisation to criticise him (see Chapter 3).

Thus, between 1870 and 1884 Scott was under little pressure to reappraise and enhance how he ran his affairs; this is the bedrock of one of the thesis' principal arguments. This thesis contends that because department heads had almost complete authority over their departments before 1900 with little criticism of, or constraints on their freedom of action, over time their thinking on railway management could stagnate or become narrow, and inefficiencies could develop in the operational practices they were employing. Scott's case supports this argument. He had never worked outside the LSWR between 1852 and 1870 and, as such, he did not acquire experience of how railway operation and administration had developed in the wider British railway industry. Consequently, with few constraints on his freedom to manage the department as he saw fit, his thinking on railway management stagnated over this period. The result was that when the company's traffic and operational complexity increased dramatically in the 1870s, he simply lacked the knowledge or ability to adapt the Traffic Department's operational practices to efficiently manage this changed situation. Indicative of the stagnation in his thinking, when Adams was appointed Locomotive Superintendent from outside the company in 1878, his challenges of Scott's management techniques highlighted to the directorate their obsolete nature.

But there was another factor that contributed to diminishing the LSWR's profitability between 1870 and 1884. No one within the company had the 'authority, skill and energy', as Channon phrased it, to get the largely independent department heads working together, to consider matters beyond their immediate remits, or to provide the company with strategic leadership.[564] This chapter has also developed this thesis' second main argument: that between 1870 and 1911 the quality of the leadership and oversight the LSWR's independent department heads received

[563] Hughes, 'The Board of Directors of the London & North Eastern Railway,' p.169-175; Channon, *Railways in Britain and the United* States, p.180-192
[564] Channon, *Railways in Britain and the United States, 1830-1940*, p.42

was an important element of the company's financial success. Before 1881 the board was unable to oversee or coordinate the company's different branches effectively, for reasons outlined above. Scott was therefore not the only individual who had the freedom to manage his affairs inefficiently. For example, Beattie managed the Locomotive Department very poorly between 1871 and 1877. However, with the company's profitability progressively declining, by 1881 the directors realised they were not effectively overseeing the company's increasingly complex operational affairs, and, so, they delegated authority to Scott to do this. He failed, principally because of Adams, the Locomotive Superintendent. Scott and Adams possessed opposing and incompatible philosophies of railway management. As the latter repeatedly challenged the company's established operational practices, and vastly improved the quality of the Locomotive Department's management, the directors increasingly favoured his opinions on policy. Yet, because both individuals had authority within their departments, neither of their philosophies of railway management came to dominate the company's policies and, consequently, between 1881 and 1884 the LSWR never developed unified operational strategies that would possibly have reduced its excessive operational costs.

The disparate and uncoordinated nature of the LSWR's management was, therefore, a significant contributory factor in its operating ratio being the poorest amongst Britain's fifteen largest railway companies by 1884.

Part 6 – Appendices

4.1. LSWR line purchases, 1870-1884

Line	Year	Cost
Direct Portsmouth Line	1871	£352,250
Devon & Cornwall Line	1871	£106,731
Lidford Extension	1874	£206,667
Barnstaple & Ilfracombe	1875	£139,968
Stokes Bay Line	1875	£40,227
Salisbury & Yeovil Line	1878	£653,694
Staines, Wokingham & Woking Junction Railway	1878	£543,188
Devon & Cornwall for Plymouth line	1878	£244,639
Exeter & Crediton	1879	£106,301
Lymington Branch	1879	£45,378
Holsworthy Line	1880	£305,213
Botley & Bishops Waltham	1882	£21,666
Salisbury & Dorset Line	1883	£188,054
Cattewater Branch	1883	£34,494
Mid-Hants Railway	1884	£212,022

Source: TNA, RAIL 1110/281 and 283, LSWR Reports and Accounts 1870-1884

4.2. The LSWR driver's and firemen's petition to the LSWR board -May 1874, Source: Tamworth Herald, 16 May 1874, p.3

RAILWAY SERVANTS.

A memorial, which it is stated has been signed by upwards of 400 drivers and firemen of the London and South-Western Railway, has been presented to the directors of that company, in which the memorialists ask for the following among other con essions :—

"That all enginemen and firemen be paid at the rate of ten hours a day ; that each day stand by itself ; that no man be required to go on duty for less than a day's pay, and receive not less than six days' wages per week unless on leave of absence or unable to work through sickness ; that all overtime be paid for at the rate of eight hours per day, and commence after ten hours' duty ; that all time worked between twelve o'clock midnight on Saturday and twelve o'clock midnight on Sunday be paid for at the rate of eight hours per day ; that men on passenger trains shall not run more than 160 miles, and men on goods trains not more than 100 miles for a day's wages ; and that work performed after this number of miles is run, or after ten hours' duty be considered overtime and paid for as such ; that the hours of duty for shunting enginemen and firemen be 12 per day, out of which two hours shall be allowed for meals, all overtime and Sunday work to be paid for at the rate of eight hours per day ; that as far as practicable nine hours be the *minimum* time off duty ; that all enginemen be paid at the following rate :—First six months, 5s. 6d. per day ; second six months, 6s. 6d. ; after one year, 7s. ; and after five years, 7s. 6d. per day ; that the following be the rate of wages for firemen :—For the first year, 3s. 6d. per day ; for the second year, 4s. ; after the third year, 4s. 6d. ; and when required as enginemen, 5s. 6d. per day." The other parts of the memorial relate to shed work, promotion by seniority, lodging allowance, overcoats, and terms of leaving the service ; and in conclusion the memorialists state "they are not unmindful of the kind treatment they have ever received at your (the directors') hands, and trust that as it is their aim to do their duty satisfactorily, they will succeed in obtaining your approbation and esteem."

4.3. Track width of the LSWR's lines 1878-1890

Year	'78	'79	'80	'81	'82	'83	'84	'85	'86	'87	'88	'89	'90
One	220	222	223	223	223	220	210	210	228	228	228	230	221
Two	471	490	490	490	489	490	497	532	513	536	543	553	579
Three	2	2	2	2	2	2	3	3	4	8	14	14	15
Four (or more)	5	5	5	6	7	9	12	15	14	16	17	17	17
Number of miles above two lines	7	7	7	8	9	11	15	18	18	24	31	31	32
% of miles above two lines	1.00 %	0.97 %	0.97 %	1.11 %	1.25 %	1.53 %	2.08 %	2.37 %	2.37 %	3.05 %	3.87 %	3.81 %	3.85 %

Source: Board of Trade, *Railway Returns* 1878-1890

Chapter 5 – Company policy during Charles Scotter's tenure: 1885-1897

After Scott's general managership, when the LSWR's financial performance had deteriorated, the directors looked for a new General Manager that could transform the company's fortunes. In March 1885 they appointed Charles Scotter, who through wide-ranging reforms significantly improved the LSWR financial performance. During his tenure its OR fell from being seven percent higher than the fifteen largest railway companies' average when he was appointed in 1885, to aligning with it by 1889. Additionally, by 1897 its ROCS had been restored to 1872 levels (five year moving average). Furthermore, during Scotter's General Managership the company's share price and dividends became amongst the highest in the British railway industry. Consequently, on Scotter's retirement in 1897 *Railway Magazine* commented that 'there is no instance on record in this country where such striking results have been produced by a railway manager as those which have, within the short period of twelve years, attended the policy pursued by Sir Charles Scotter.'[565]

Scotter's considerable improvement of the LSWR's operational management meant he obtained decisive influence over its capital investment strategies because the directors, who still lacked experience of railway management from outside the company (see Chapter 3), increasingly trusted his judgement. He significantly influenced the company's decision to purchase the Southampton Docks in 1892, as well as many other significant capital projects. Some of these investments were successful; others were not, especially in the late-1890s.

Section 1 – Company Operations

5.1. Scotter's Appointment

Analysing the process by which Scotter was appointed to the LSWR's General Managership demonstrates one of this thesis' main arguments. Because between 1870 and 1911 the LSWR's managers, particularly the traffic managers, rarely developed management techniques that were more progressive than those they were already using, the advancement of the company's operating practices was principally dependent on new senior managers being appointed from external sources.

[565] *Railway Magazine*, November 1897, p.385

The conditions for Scotter's appointment were created from the mid-1870s onwards. Many of the company's old directors, who had joined it in the 1850s, were replaced. The newcomers, who dominated the board by 1885, would therefore have had no long-standing loyalty to the LSWR's existing managers or Scott, and would not be wedded to established operational practices. Thus, faced with the poor state of the company's finances in 1885, it can be suggested that they were more open to radical and wide-ranging reform of the company's management practices as a result, as demonstrated by the fact that in the early-1880s they had increasingly favoured Adams' viewpoints on matters of policy over Scott's (see Chapter 4).

Clearly they realised that no existing LSWR senior manager possessed the ability to reform and enhance the company's management. Indicative of this, in December 1884 they rejected a memorial from the company's principal station agents that Verrinder, the Traffic Superintendent,[566] be appointed General Manager.[567] Furthermore, they rejected applications for the post from White, the Western District Superintendent[568] and Copus, who had resigned as Southampton Station superintendent in 1880.[569] It is therefore plausible to suggest the directors rejected these individuals' applications because they felt that appointing a long-standing LSWR employee as General Manager would have led to the company's obsolete and inefficient operating practices persisting or not being reformed in the way they desired. They likely recognised that the Traffic Department's introverted clerical promotional structures (see Chapter 3) were possibly producing managers that had inferior skills to those elsewhere in the British railway industry, who lacked a capacity to innovate, and did not have the range of employment experiences to recognise the faults in the company's existing management practices.

Conversely, the directors evidently realised that only someone with considerable experience of management in the wider British railway industry could effectively reform the company's obsolete operating practices. Demonstrative of this fact, in addition to Scotter, the other shortlisted candidates for the LSWR General Managership in 1885 were Irvine Kempt of the Caledonian Railway and Frederick Harrison of the LNWR.[570] Interestingly, both eventually became General Managers of their respective railways, possibly suggesting the directors had developed

[566] TNA, RAIL 411/492, Clerical staff character book No. 2, p.625
[567] *South Western Gazette*, December 1884, p.2
[568] TNA, RAIL 411/492, Clerical staff character book No. 2, p.674
[569] TNA, RAIL 411/492, Clerical staff character book No. 2, p.78; TNA, RAIL 411/221, Special Committee Minute Book, Special Committee as to the General Manager, 26 November 1884
[570] TNA, RAIL 411/221, Special Committee Minute Book, Special Committee as to the General Manager, 13 January 1885

an awareness of the skills the LSWR's new General Manager would need to turn the company's fortunes around.[571]

5.2. Scotter's authority

Scotter's successful reformation of the LSWR's financial performance relied on him gaining authority over the company's department heads, coordinating their actions effectively and giving them strong leadership – something the company lacked between 1870 and 1884. As Chapter 4 argued, in 1881 Scott had theoretically been given responsibility for harmonising and overseeing the department heads' actions.[572] Yet, because the directors increasingly favoured Adams' perspectives on policy he was unable to do this. Scotter quickly altered the relationship between the General Manager and the rest of the company. Primarily, he delegated many responsibilities to the departments, such as staff management and the company's other routine functions. By availing himself of the detailed management of the company this allowed him to be a far more authoritative, decisive and effective General Manager than Scott, as near-contemporaries recognised. *Railway Magazine* stated that by detaching from the detail of the company's administration Scotter had 'ample time to give the necessary close attention to the real management of the undertaking.'[573]

Scotter's authority over the department heads was also bolstered by his comprehensive knowledge of all branches of railway work. His MSLR career had been varied; he had worked in the company's passenger, goods and continental sections, and was involved in the Grimsby Docks' management.[574] He had worked under two of Britain's leading nineteenth-century railway managers, Sir Edward Watkin and Sir James Allport. Presumably he learned much of railway management from them.[575] Unlike Scott, who never gained authority over Adams' actions (see Chapter 4), Scotter's wide-ranging experience of most branches of railway management gave him the ability to effectively critique department heads' activities where necessary and understand their needs. Reflecting this, in 1897 he stated that 'a railway manager is the head of a varied as well as an extensive concern, and he needs to know somewhat of most things.'[576]

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[571] *Liverpool Echo*, Thursday, 6 April 1893; *Dundee Courier*, Thursday 22 May 1902
[572] *The South Western Gazette*, December 1881, p.2
[573] *Railway Magazine*, May 1904, p.427
[574] TNA, RAIL 463/305, Manchester, Sheffield and Lincolnshire Railway, Staff Record 1, p.398; Hodgkins, *The Second Railway King*, p.401 and p.541
[575] *Railway Magazine*, May 1904, p.427
[576] Interview from *The Chronicle*, reprinted in the *Liverpool Mercury*, Wednesday 29 December 1897, p.5

Soon after his appointment Scotter had asserted his authority over the department heads and directed their actions in line with his two corporate strategies: to reduce the company's excessive expenditure and grow its business (see sections 5.2 and 5.3). Furthermore, Scotter created a 'team spirit' within the company that promoted collegial working and company cohesiveness. In August 1886 Dutton stated that expenditure reductions had occurred 'only by [officers] amicably working together'[577] and, unlike before 1885, between 1885 and 1897 no disputes can be found between department heads, or between them and the General Manager. Scotter's case therefore highlights one of this thesis' main arguments: the LSWR's financial performance between 1870 and 1911 was to an extent dependent on its department heads' being actions overseen and coordinated effectively by those above them in the hierarchy.

5.3. Expenditure reductions 1885-1892

Chapter 4 argued that because activities of the LSWR departments were uncoordinated before 1884, the company never developed a coherent strategy to reduce its excessive operating costs. Scotter reversed this situation. The years from 1885 to 1892 stand out as a period when the company was provided with the most cogent set of strategic objectives by its decision-makers between 1870 and 1911. Scotter's primary goal was to reduce its excessive operating expenditure. In 1887 Higgs, the Running Department Superintendent, evidenced the economy drive Scotter had initiated, expressing his hope that the company would soon regain its title as 'the most economical working line in the kingdom,' and stated this was achievable if 'no stone was left unturned.'[578]

Scotter improved the LSWRs cost position in two ways. Firstly, he instructed the department heads to find ways to reduce departmental expenditure, and presumably gave them beneficial knowledge of how other British railways were managed at the time. Additionally, he reformed along modern lines the Traffic Department's obsolete and inefficient operations which, as Chapter 4 demonstrated, were injurious to the company's financial performance before 1885. Describing Scotter's reforms of the LSWR's management therefore develops one of this thesis' main arguments: because developments and improvements in its operating practices were so slow between 1870 and 1911, major advancements principally occurred when new senior managers joined the company from other railways.

[577] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, 11 August 1886, Half Yearly meeting of the Proprietors, 8 August 1885, p.1
[578] *South Western Gazette*, April 1887, p.59

Traffic Department

Looking back in 1905, Sam Fay, by then the GCR's General Manager, claimed that in the Traffic Department Scotter reformed many long-established administrative practices.[579] Unfortunately, the surviving records make it impossible to describe these reforms in full, as is the case with the reforms in most of the company's departments. However, it is possible to gain some sense of what was involved.

Scotter firstly created straightforward lines of command and accountability in the department, which likely improved the effectiveness and rapidity of decision-making within it. Firstly, he phased out the small district superintendencies that had been established in 1864[580]; leaving the company with three large administrative districts (see Chapter 2).[581] He also rationalised the Goods Department structures. In 1878 this department had been split and a portion under Mills, the Assistant Goods Manager, was removed from Nine Elms to Waterloo to administer the company's goods business in 'the country'.[582] When Haddow, Goods Manager, and Mills died in 1887[583] and 1888 respectively,[584] all the department's functions were placed under the new Goods Manager, Charles Owens. Concurrently, the Goods Manager's status within the company was raised and the post was made directly answerable to Scotter, rather than to Verrinder, the Traffic Superintendent, as was previously the case.[585] It is not wholly clear why this change was made. However, Haddow's obituary in the *South Western Gazette* recorded that the post of 'Goods Manager' had for some time been a none too desirable one' because he had been unable to manage his affairs effectively.[586] It is therefore plausible to suggest that by making the Goods Manager directly answerable to him, Scotter could consult Owens directly if problems arose in the Goods Department and manage them more effectively, rather than having to go through Verrinder.

Scotter also transformed the way wage increases and promotions were administered. Before 1885 Scott directly controlled these matters. Scotter placed all staffing under a 'Chief of Traffic

[579] *Great Central Railway Journal*, July 1906, p.3
[580] TNA, RAIL 411/492, Clerical staff character book No. 2, p,160
[581] *South Western Gazette*, June 1892, p.10
[582] RAIL 411/221, Special Committee Minute Book, Special Committee on the Nine Elms Goods Department, 5th February 1880, p.268
[583] *South Western Gazette*, October 1887
[584] TNA, RAIL 411/255, Traffic Committee Minute Book, Minute No.1784, 17 August 1888
[585] *South Western Gazette*, 1 March 1891, p.7
[586] *South Western Gazette*, 1 February 1892, p.2

Department Staff.'[587] With dedicated oversight of staff matters efficiencies were achieved. The Traffic Department's wage bill, which constituted approximately seventy-five percent of its expenditure, fell from 8.46d per train mile in 1885 to 8.00d in 1892 (8.07d)[588]; or by 5.44 percent (Figure 1).

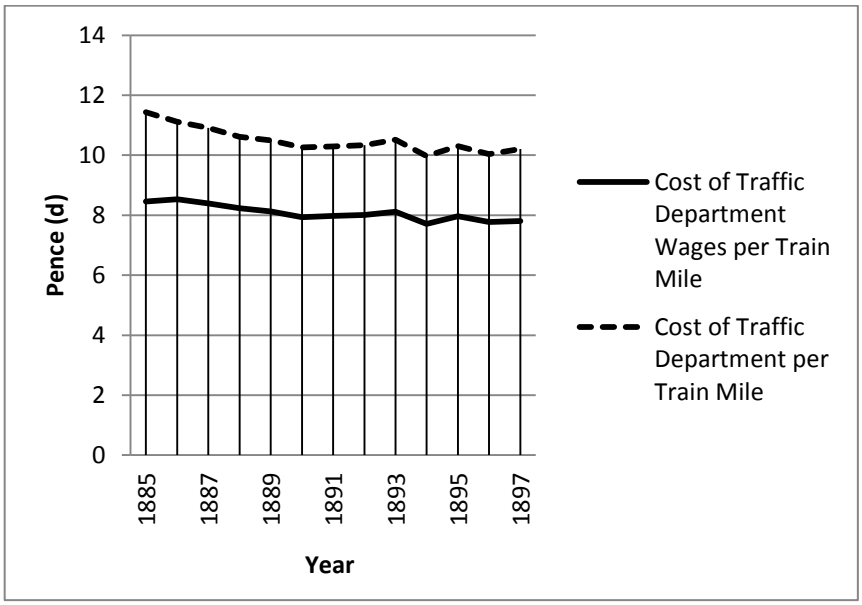


Figure 1: Cost of the Traffic Department and its wages per train mile 1885-1897; Source: RAIL 1110/283, LSWR Reports and Accounts, 1885-1897

After 1885 Traffic Department employees were also seemingly encouraged to use stores more efficiently. In June that year the *SWG*, which Traffic Department staff produced, printed its first instructive editorial stating that all staff members should practice economic usage of 'gas, stores, coal and stationery.'[589] The stress on economy remained until the 1890s and efficient fuel, gas and supplies consumption was heavily mentioned throughout the company's 1892 Appendix to the working timetable.[590]

Such reforms significantly improved the Traffic Department's efficiency. Between 1885 and 1892 its expenditure per train mile fell from 11.44d to 10.03d (10.42d) (Figure 2); while its cost as a proportion of overall company revenue fell from 17.53 to 16.08 percent.[591]

[587] Buckmaster, *Railway Reminiscences*, p.7
[588] All inflation adjusted figures are in brackets and have been equalised at 1885 levels.
[589] *South Western Gazette*, June 1885, p.4
[590] South Western Circle Collection [SWC], Appendix to the Working Timetable, 1 January 1892, various pages
[591] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, 1885-1897

Chapter 4 argued that during Scott's General Managership a substantial portion of the LSWR's excessively high expenditure was attributable to the inefficient working of its train services and congestion on the main lines outside of Waterloo Station. Consequently, after 1885 Scotter, with Verrinder's (Traffic Superintendent) support, reduced the company's train mileage by reorganising timetables.[592] This did not always mean services got worse. Bradley stated that train schedules were improved[593] and adverts from regional newspapers show that trains were accelerated and added in this period, as well as discontinued (Figures 2 and 3). Consequently, in November 1885 Scotter reported to the Traffic Committee that in the previous month the company's trains had run 10,000 fewer miles per week than in September 1884. Indeed, factoring in the 'new' Guildford line's opening, they still ran 2,381 fewer miles overall.[594] Furthermore, in January 1886 Verrinder stated that the Salisbury and Yeovil line goods trains were running 1,666 fewer

SOUTH WESTERN RAILWAY.

NOTICE of Alterations in the Train Service, commencing 1st OCTOBER.

EXETER AND NORTH DEVON LINES.

WEEK DAYS.

The 7.30 a m Train from Exeter to Torrington and the 11.50 a m Train from Torrington to Exeter will be discontinued.

SIDMOUTH BRANCH.

The 9,0 p m Train from Sidmouth to Sidmouth Junction and the 9 45 p m Train from Sidmouth Junction to Sid mouth will be discontinued.

ILFRACOMBE BRANCH.

The 9.20 a m Train from Barnstaple Junction to Ilfracombe will be discontinued.

The 11 40 a m Train from Ilfracombe to Barnstaple Junction will be discontinued.

The 8.30 p m Train from Ilfracombe to Barnstaple Junction on Mondays, Wednesdays, and Saturdays will be discontinued.

EXMOUTH BRANCH.

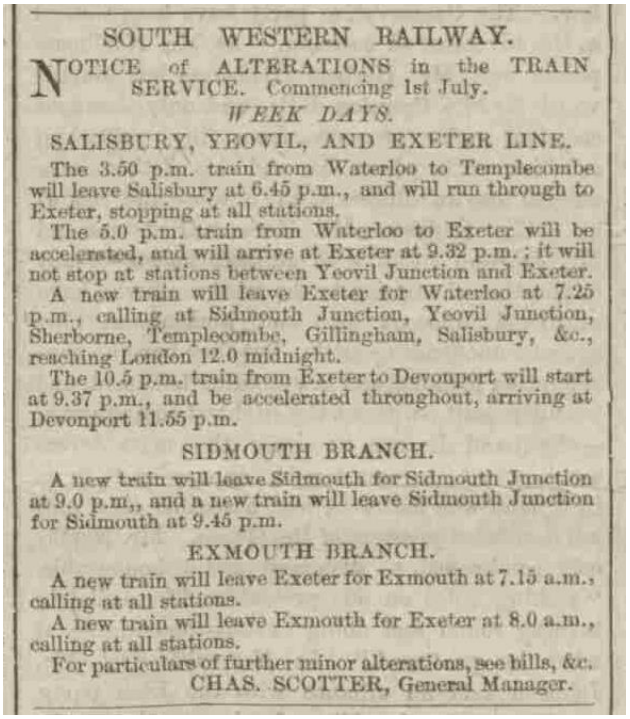
SUNDAYS.

The 7.30 a m Train from Exeter to Exmouth and the 9.30 p m Train from Exmouth to Exeter will be discontinued.

For minor alterations see Time Tables.

CHAS. SCOTTER, General Manager.

Figure 2: Alterations to train services on numerous lines. Source: *Western Times*, Monday 28 September 1885



SOUTH WESTERN RAILWAY.

NOTICE of ALTERATIONS in the TRAIN SERVICE. Commencing 1st July.

WEEK DAYS.

SALISBURY, YEOVIL, AND EXETER LINE.

The 3.50 p.m. train from Waterloo to Templecombe will leave Salisbury at 6.45 p.m., and will run through to Exeter, stopping at all stations.

The 5.0 p.m. train from Waterloo to Exeter will be accelerated, and will arrive at Exeter at 9.32 p.m.; it will not stop at stations between Yeovil Junction and Exeter.

A new train will leave Exeter for Waterloo at 7.25 p.m., calling at Sidmouth Junction, Yeovil Junction, Sherborne, Templecombe, Gillingham, Salisbury, &c., reaching London 12.0 midnight.

The 10.5 p.m. train from Exeter to Devonport will start at 9.37 p.m., and be accelerated throughout, arriving at Devonport 11.55 p.m.

SIDMOUTH BRANCH.

A new train will leave Sidmouth for Sidmouth Junction at 9.0 p.m,, and a new train will leave Sidmouth Junction for Sidmouth at 9.45 p.m.

EXMOUTH BRANCH.

A new train will leave Exeter for Exmouth at 7.15 a.m., calling at all stations.

A new train will leave Exmouth for Exeter at 8.0 a.m., calling at all stations.

For particulars of further minor alterations, see bills, &c.

CHAS. SCOTTER, General Manager.

Figure 3: Alterations to train services on numerous lines Source: *Exeter and Plymouth Gazette,* 28 June 1886

[592] *The Times*, 14 December 1910, p. 13

[593] Bradley, *LSWR Locomotives – the Adams Classes*, p.121

[594] TNA, RAIL 411/255, Traffic Committee Minute Book, Minute 630, 11 November 1885

miles monthly than in 1885,[595] while other similar mileage reductions were made to services thereafter.[596] These improvements to the company's train services were aided by a major expansion of the company's main running lines near Waterloo, as Section 2 discusses.

Overall, despite train mileage continuing to increase after 1885 because of traffic growth, Scotter's reorganisation of train services ensured they were operated more efficiently than before 1885. For example, Dutton reported in 1886 that improved train working had saved the company £7,299 in that half-year, or 0.54 percent of total company expenditure.[597] Furthermore, in 1887 Higgs stated that operational efficiencies had reduced the company's expenditure on oil by £6,000 in 1886.[598]

Engineering Concerns

The Engineering Department's expenditure was also reduced after 1885; yet limited evidence means how this was achieved is unclear. Firstly, between 1884 and 1885 its expenditure on materials dropped from £103,417 to £77,934 (-24.64 percent). [599] Much of this cost reduction was because stores contacts were renegotiated. For instance, in August 1885 a new contract reduced the amount the company was spending per loads of logs[600] (this was at the same time as many other contracts were being renegotiated for the company by the storekeeper.[601]) Additionally, between 1885 and 1892 departmental labour costs reduced from 2.65d per train mile to 2.51d (2.53d); suggesting its operational efficiency improved over this period.[602] These and possibly other unknown reforms reduced the Engineering Department's overall expenditure per train mile from 6.25d in 1885 to 5.90d (5.95d) in 1892 (-7.23 percent); while as a proportion of company revenue its costs dropped from 9.57 to 9.16 percent.

[595] TNA, RAIL 411/255, Traffic Committee Minute Book, Minute 723, 6 January 1886
[596] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, 11 August 1886, Half Yearly meeting of the Proprietors, 8 August 1885, p.1
[597] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, half Yearly meeting of the Proprietors, 11 August 1886, p.1
[598] *South Western Gazette*, April 1887, p.59
[599] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, Half reports 1884-1885
[600] TNA, RAIL 411/186, Engineering and Stores Committee, Minute 204, 5 August 1885
[601] TNA RAIL 411/186, Locomotive and Stores Committee, Minute 72, 29 April 1885; TNA RAIL 411/186, Locomotive and Stores Committee, Minute 127, 18 June 1885; TNA RAIL 411/186, Locomotive and Stores Committee, Minute 344, 9 December 1885; TNA RAIL 411/186, Locomotive and Stores Committee, Minute 112, 27 May 1885; TNA RAIL 411/186, Locomotive and Stores Committee, Minute 160, 8 July 1885
[602] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, 1885-1897

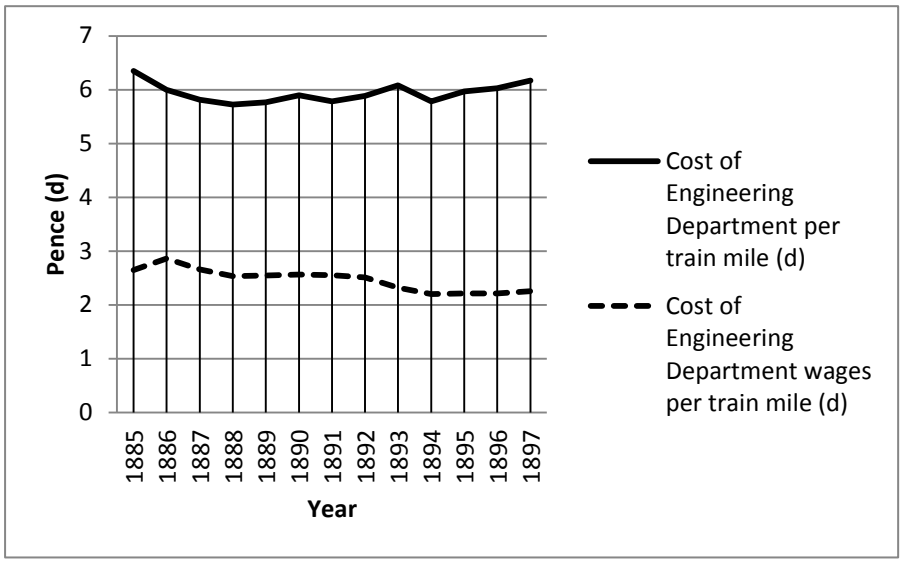


Figure 4: Engineering Department costs and wages per train mile 1885-1897; Source: TNA, RAIL 1110/283, LSWR Reports and Accounts, 1885-1897

Rolling Stock

Scotter also enhanced the oversight of the Locomotive, Carriage and Wagon Department's functions to improve its efficiency. On his urging, in March 1885 an independent Locomotive Committee was established consisting of two members from both the Engineering and Traffic Committees (see Chapter 2).[603] With input on locomotive and rolling stock matters coming from members of both committees, the activities of the Locomotive Department were possibly better coordinated with those of the Traffic and Engineering Departments.

Furthermore, as Chapter 2 discussed, before 1885 Adams's control of all the LSWR's rolling stock matters had overburdened him.[604] On Scotter's recommendation the Locomotive, Carriage and Wagon Works were therefore split into two departments in January 1886.[605] While the creation of two departments out of one might appear to have raised the possibility of weakening their management, this was not the case. Scotter could more efficiently coordinate the activities of both the Locomotive and Carriage and Wagon works, and he did not have to rely on one overburdened official for information as to their activities. Also, the works' separation enabled the two departments' activities to be better overseen by their heads. Consequently, after 1885 the efficiency and output of both improved, as will now be discussed.

[603] TNA, RAIL 411/7, Court of Directors Minute Book, Minute 1659, 5 March 1885
[604] Weddell, *L.S.W.R. Carriages: Volume One*, p.209-244
[605] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 299, 28 October 1885 and Minute 355, 9 December 1885

Locomotive Department

Once freed from overseeing the Carriage and Wagon Works, Adams – whose philosophies of railway management seemingly aligned with Scotter's – improved the Locomotive Department's efficiency to a greater extent than he was able to between 1878 and 1884. Helped by the LSWR's train services being more efficiently worked, after 1885 the department used fuel more economically.

From 1885 the LSWR investigated scientific means of reducing fuel usage. On 19 March 1885 Adams wrote to numerous locomotive superintendents asking about the tests their companies employed to ascertain the efficiency of the fuel they used. The superintendents of the GWR, Midland, LNWR and GNR (all apart from the GNR had chemical testing facilities)[606] all reported that they conducted no such experiments. Only the Admiralty, who was written to subsequently, reported that it undertook such testing.[607] These investigations' results are unknown. Additionally, in mid-1887 Edward Frankland was re-employed and tasked with analysing the quality of water used in LSWR locomotives and how it affected their efficiency (see Chapter 4).[608] The enquiry's result was that Adams recommended fitting ten of them with a Mr Maignen's 'process', which softened the water in their boilers[609] and, presumably, reduced the rate at which boiler tubes wore out.[610] From 1885 Adams also employed other means of reducing the LSWR's fuel consumption. In September that year he trialled on some locomotives a new vortex blastpipe[611] designed by his nephew.[612] This was eventually fitted to most locomotives. It reduced their fuel usage by an average 4.5lb of coal per engine mile, and between 1886 and 1888 saved the company £34,000, or approximately 2.67 percent of locomotive department costs in this period.[613] Around this time other economical technologies were also investigated. As far as can be determined feed water heaters were only considered by Adams and never implemented.[614] In June 1885 he also experimented with metallic packing on locomotive boilers[615] and in late 1886 compounding on a principle designed by William Worsdell of the LNWR

[606] Russell and Hudson, *Early Railway Chemistry and its Legacy*, p.86
[607] HRO, 104A02/02/15, Locomotive Committee Minute 2495, 15 April 1885
[608] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 947, 27 April 1887
[609] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 1051, 3 August 1887
[610] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 1478, 30 January 1889
[611] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 240, 2 September 1885
[612] Hamilton Ellis, C., *Twenty Locomotive Men*, (Rochester, 1958), p.93
[613] *London Daily News*, Wednesday, 26 September 1888, p.3
[614] Bradley, *LSWR Locomotives – the Adams Classes*, p.35
[615] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 146, 24 June 1885

was applied to one locomotive.[616] Furthermore, drivers and firemen were also incentivised to maximise fuel economy. Beattie had ceased footplate crew's premiums for efficient driving in 1877;[617] Adams reinstated these in 1887.[618]

Consequently, after 1885 these policies and innovations, combined with more efficient train operations, reduced the Locomotive Department's fuel usage. The average annual amount of coal LSWR locomotives burned per engine mile the usage dropped from 31.2lbs to 26.90lbs over the same period.[619] Indeed, in February 1888 Dutton announced that despite the company's train mileage increasing it was still consuming 3,300 fewer tons of fuel per annum than in 1884.[620] It was only when Adams introduced heavier locomotives after 1888, to accommodate heavier train loads and quicker schedules that fuel usage increased again.[621] Although, after 1891 the fuel locomotives burned per engine mile stabilised at around 29.lbs.[622]

With the Nine Elms locomotive works' receiving dedicated oversight from Adams, its efficiency was improved. His rebuilding, expansion and reorganisation of the works allowed the LSWR to restart locomotive construction in 1887, reducing expenditure by £5,700 annually.[623] Additionally, before 1891 locomotives underwent considerable repairs at Northam and Exeter sheds. Yet, between then and 1894 general repairs were consolidated at Nine Elms, which presumably allowed the department to find economies of scale.[624] These and other possible reforms contributed to reducing works expenditure from 2.89d to 2.11 (2.13d) per train mile (-26.99 percent) between 1885 and 1892. However, it is not easy to determine how changes in material prices, which directors' comments suggest fluctuated in the period,[625] affected works spending over this period. Nevertheless, labour costs will be taken as an approximate measure of overall works efficiency, as these were largely determined by the company setting employees' wages, compared with material costs which were more closely tied to external market

[616] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 765, 11 November 1886
[617] TNA, RAIL 411/182, Locomotive Committee Minute Book, Minute 966, 4 January 1877
[618] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 917, 16 March 1887
[619] TNA, RAIL 411/44, Engineering and Stores Committee Book, 1884-1887 and RAIL 411/186, Locomotive Committee Minute Book 1885-1889
[620] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, half Yearly meeting of the Proprietors, 9 February 1888, p.1
[621] Bradley, *LSWR Locomotives – the Adams Classes*, p.85
[622] TNA, RAIL 411/44, Engineering and Stores Committee Book, 1884-1887 and RAIL 411/186-190, Locomotive Committee Minute Book 1885-1896
[623] Bradley, *LSWR Locomotives – the Adams Classes*, p.85
[624] Bradley, *LSWR Locomotives – the Adams Classes*, p.35
[625] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898; report of half Yearly meeting of the Proprietors, 3 August 1887, p.1; report of half Yearly meeting of the Proprietors, 8 August 1889, p.1

fluctuations. Between 1885 and 1892 the Locomotive works' labour costs per train mile fell from 1.65d to 1.19d (1.20d), or by 27.88 percent,[626] suggesting that a large portion of the works' overall decrease in expenditure came from more economic working practices. Indeed, it is known that between January 1887 and July 1888 decreases in piecework prices in the works saved the company an average of £2,400 per annum.[627]

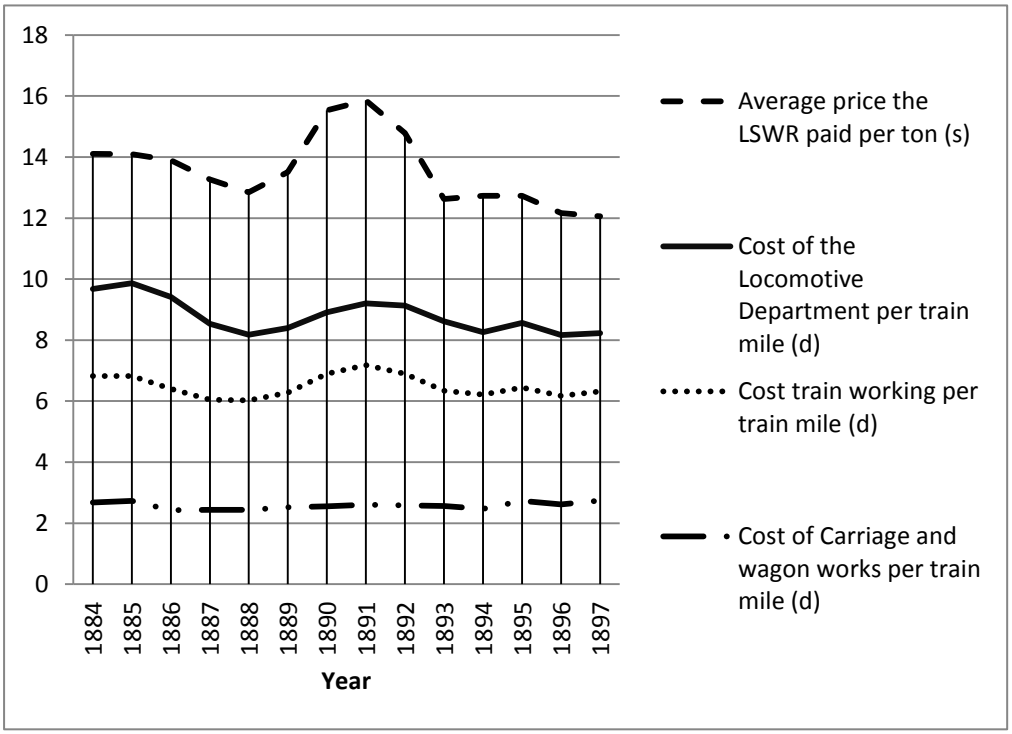


Figure 5: Cost of the Locomotive Department per train mile 1885-1897; Source: RAIL 1110/283, LSWR Reports and Accounts, 1885-1897

Combined with the company's train services being managed more efficiently, these developments collectively improved the Locomotive Department's cost position after 1885. Between then and 1888 the department's expenditure per train mile dropped from 9.86d to 8.16d (8.42d) (-14.69 percent), largely because of a fall in fuel prices (which constituted the department's largest single outgoing). However, as Figure 5 shows, enhancements in the department's management, both in the works and in locomotives' fuel usage, allowed it to absorb rising fuel costs between 1888 and 1891, and maintain much lower expenditure thereafter.[628] Overall, this evidence suggests that the removal of Carriage and Wagon affairs from Adams' remit meant he had more time to commit to reforming and supervising the Locomotive Department's business, which contributed to improving its efficiency.

[626] RAIL 1110/283, London and South Western Reports and Accounts, 1880-1898
[627] TNA, RAIL 411/186, Locomotive Committee Minute Book, Minute 1056, 3 August 1888
[628] Board of Trade, *Railway Returns*, 1885 and 1887

Carriage and Wagon Concerns

After receiving its own dedicated head in 1886 (Panter), the Carriage and Wagon Department was managed more efficiently and responded better than previously to changes in the LSWR's trading environment. Before 1885 Scott had favoured stretching the company's rolling stock to the limit before repairs and renewals were undertaken. In the mid-1880s many carriages the company had built in the 1860s were still in service and Adams frequently complained that they were hard to maintain and their complicated construction raised maintenance costs (see Chapter 4).[629]

Conversely, Scotter and Panter favoured modernising and augmenting company's rolling stock to reduce maintenance costs. With Scotter's support, Panter quickly replaced most obsolete carriages with modern types[630] and Acworth stated in 1888 that while the company's carriage stock was not wholly modern, it had 'vastly improved' in three years.[631] Indeed, many of the new carriages for long-distance services were new modern 'bogie' types, which had larger capacities and better ride comfort than existing fixed wheel carriages.[632] Furthermore, the company's carriage stock was grown at a quicker pace than before 1885 to better accommodate traffic increases. Between 1878 and 1884 only 332 carriages were added to the LSWR's rolling stock; between 1885 and 1892 the figure was 560. [633] Consequently, between 1884 and 1889 the number of passengers each carriage conveyed yearly fell from 19,384 to 18,528 (-4.42 percent).[634]

This modernisation and enlargement of the LSWR's carriage stock contributed to reducing maintenance costs. Between 1885 and 1889 the Carriage Department's expenditure on repairs and renewals declined from an average of £30.22 per vehicle to £26.16 (£26.84).[635] However, because of a lack of data it is again unclear how department costs were affected by changing material prices.

[629] TNA, RAIL 411/470 Locomotives, boilers, rolling stock, etc: correspondence, 1882-1884, Report on Rolling Stock, 27 March 1883, p.4-11
[630] Weddell, *L.S.W.R. Carriages: Volume One*, p.209-244
[631] Acworth, 'The South-Western Railway,' p.818
[632] Weddell, *L.S.W.R. Carriages: Volume One*, p.227-232
[633] RAIL 1110/281, 283 and 284, London and South Western Reports and Accounts, 1870-1900
[634] Board of Trade, *Railway Returns*, 1885 and 1889
[635] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898

After 1891 an undeterminable portion of the Carriage and Wagon Department's efficiencies possibly came from its new works opening. As Chapter 4 discussed, the removal of the Carriage and Wagon works into 'the country' had been resisted by Adams and Scott in 1882.[636] Yet, Scotter rapidly became aware that such a transfer was necessary given the Goods Department required extra space at Nine Elms to cope efficiently with increasing traffic.[637] In the late-1880s, Scotter, with Panter's support, initiated the construction of a new works at Eastleigh. The LSWR purchased sixty acres of land there in December 1886 [638] and the works was constructed between 1889 and 1891.[639] The project's capital cost was £212,961, or 5.20 percent of the company's total capital expenditure between 1889 and 1893.[640]

The degree to which the new works improved departmental efficiency is unclear. Labour costs will again be taken as an approximate measure of the works' efficiency. Between 1885 and 1889 the Carriage and Wagon Department's labour costs per train increased from 1.20d to 1.31d (1.35d), and from then until 1891, when the works were under construction, there was no change. However, thereafter they fell to 1.22d (1.24d) in 1893. [641] This reduction, therefore, tentatively suggests the new Carriage and Wagon works improved the department's efficiency after 1891.

Conclusion

This section has shown how under Scotter's strategic direction many aspects of the LSWR's operating practices were reformed and enhanced after 1885, which improved considerably the company's cost position. Indeed, between 1885 and 1892 the company's total expenditure per train mile reduced from 39.04d to 35.89d (36.19d), as Figure 6 shows (-8.07 percent). This reduction was an important contributory factor in transforming the LSWR from being one of the worst performing major British railway companies in 1884, into being one of the best by 1892 (see Chapter 1). However, it also demonstrates clearly, how under Scott and the board's leadership before 1884, many of the company's operating practices had exhibited inefficiency and waste.

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[636] HRO, 104A02/A2/12, Locomotive and Stores Committee, Minute No. 1153, 11 October 1882
[637] RAIL 1110/283, London and South Western Reports and Accounts, report and statement of accounts for the year ending 31 June 1891; *South Western Gazette*, November 1889
[638] *The Hampshire Advertiser*, Saturday, December 11, 1886, p. 7
[639] TNA, RAIL 411/16, Court of Directors Minute Book, Minute No.106, 22 November 1888; *South Western Gazette*, 5 January 1889, p.9 and 1 July 1891, p.5
[640] RAIL 1110/281, 283 and 284, London and South Western Reports and Accounts, 1870-1900
[641] RAIL 1110/283, London and South Western Reports and Accounts, 1880-1898

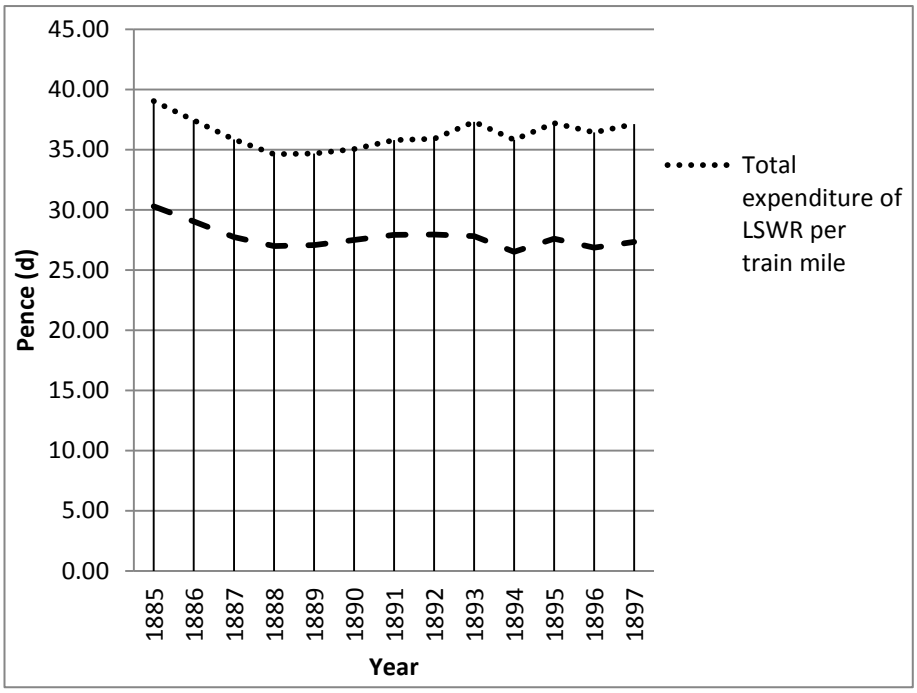

Figure 6: The expenditure of the LSWR and its four main departments per train mile 1885-1897. Source: Source: RAIL 1110/283, LSWR Reports and Accounts, 1885-1897

5.4. Improving the service

Scotter did not simply reduce the company's costs and his second strategy for increasing the LSWR's profitability between 1885 and 1892 was to grow the company's business by improving and expanding services to attract traffic. This was certainly a key to the LSWR's marketing. Thus, on his retirement in 1897 *Railway Magazine* commented that Scotter had wished to give 'the best possible facilities to the travelling public.'[642]

Fundamental to improving the company's service provision was Scotter's engagement with the transport needs of the public and businesses within the company's territory; something Scott had never done. For example, the *Gazette* stated in 1892 that Scotter had '[eschewed] a policy of isolation' and 'set about making himself personally familiar with the various chambers of commerce, corporations and the potential residents of towns served by the company.' Overall, he 'made troops of friends, and thus popularized the system he officially controls.'[643] In 1893 the *Hampshire Guardian* reported on this changed relationship by stating that 'a much better understanding has arisen between the company and the inhabitants of Southampton than existed a few years ago, and kindlier feelings have been entertained by both parties towards each other.'[644]

[642] *Railway Magazine*, November 1897, p.388
[643] *South Western Gazette*, January 1892, p.7
[644] *Hampshire Guardian*, unknown date, reprinted in *South Western Gazette*, 1 July 1893, p.11

Firstly, Scotter improved passenger services to towns the company had a monopoly on, whereas before 1884, either through Scott's poor train management or wilful disregard, services to such towns were considered universally poor. Indeed, in 1883 Southampton and Bournemouth were not served by a single express train to or from London.[645] Principally, Scotter responded to passenger's requests for improved services. For instance, in 1888 the Alverstoke Local Board requested that through carriages be run between 'Gosport, Stokes Bay and London', which Scotter subsequently arranged. They also requested that the 7.25pm train from London convey through passengers to Gosport, which he placed 'under consideration.'[646] The Southampton Chamber of Commerce had asked for years for a train from Southampton to Waterloo that arrived around 10am so that individuals could be in London to 'do business' at a reasonable hour. In March 1889 Scotter arranged for a train to leave 'Southampton West Station daily at 8.46 am, reaching Waterloo at 10.30am.'[647] Such minor changes could reap considerable benefits for the company's finances. In 1895 Southampton's Mayor held a banquet in Scotter's honour and stated that Southampton had 'great reason to thank Sir C. Scotter for the quick and frequent train services the town now had, and from which it had 'reaped the advantage.[648] Also Simmons argued the LSWR came to take particular pride in Bournemouth, a seaside tourist destination, which the company considered 'almost as its own creation.'[649]

		1878		1893	
		A	B	A	B
Barnstable	GWR	5.50	5	5.29	-
	LSWR	6.25	5	5.10	1
Devonport	GWR	6.32	4	5.45	2
	LSWR	7.02	5	5.17	4
Exeter	GWR	4.15	9	4.05	9
	LSWR	4.15	8	3.46	6
Ilfracombe	GWR	-	-	6.33	-
	LSWR	7.14	3	5.56	-
Plymouth	GWR	6.15	7	5.38	5
	LSWR	6.55	6	5.23	3
Tavistock	GWR	9.11	-	6.20	1
	LSWR	6.09	7	4.24	4

Table 1: LSWR competitive express services to the West Country in 1878 and 1893, A) time of the fastest train B) Total number express trains daily. An express train is defined as any train running at 30 mph plus stops in 1878 and at 40 mph in 1893. Source: Simmons, 'South Western v. Great Western,' p.34

Scotter also increased the speed of passenger services that were in competition with the GWR to the West Country. Table 1 shows that from a situation in 1878 where the LSWR had slower

[645] Simmons, 'South Western v. Great Western,' p.32
[646] *Hampshire Telegraph and Sussex Chronicle etc*, Saturday, April 14, 1888; Issue 5573
[647] *The Hampshire Advertiser*, Saturday, March 16, 1889, p.6, Issue 44624
[648] *South Western Gazette*, March 1895, p.9
[649] Simmons, 'South Western v. Great Western,' p.32

services to all the competitive destinations it served, except Exeter, by 1893 the services were faster in all cases. Simmons called this competition a 'Race for the West.'[650] How this 'race' impacted on LSWR profitability is unclear, but it can be suggested it was marginal. Aldcroft and Cain argued that such service competition was seriously damaging to British railway companies' profitability after 1880;[651] yet such arguments are usually made without considering the context of companies' individual business histories. Firstly, as Simmons argued, the evidence above suggests Scotter was far more concerned with growing the company's non-competitive traffic, which was considerably larger than that which was non-competitive.[652] Furthermore, this thesis demonstrates throughout that a multitude of other factors influenced the LSWR's financial performance between 1870 and 1911. Indeed, given Scotter was improving the company's competitive services at the same time as he was successfully transforming the railway into one of the best performing in the industry, this suggests that competition possibly had, at most, a marginal diminishing effect on its profitability. Chapter 6 presents further evidence that supports this argument for the period after 1900.

Scotter also recognised that despite raising the standard of the LSWR's goods and passenger facilities costing the company more in the short-term, such policies actually attracted custom to the railway and improved its long-term financial health. He was therefore instrumental in improving the accommodation at the LSWR's stations.[653] Chapter 4 discussed how during Scott's General Managership facilities for customers were kept in a poor state of repair. However, after Scotter's appointment the company began investing in stations and yards on Scotter's advice. In the 1885 December half-year the company spent nothing on station 'improvements, sidings, receiving offices and goods depots.' The amount expended rose to £3,248 in 1886; £17,802 in 1887 and £35,010 in 1888. It dropped in 1889 to £16,037, but reached £41,880 in 1890.[654] Also not listed in the company's financial reports were the many smaller improvements made around the network. For example, between November 1885 and July 1886 £374 was spent on a new footbridge at Axminster Station[655]; from August 1885 to June 1886 a new platform and station canopy was added at Bracknell costing £339,[656] and between June 1886 and September 1887

[650] Simmons, 'South Western v. Great Western,' p.29
[651] Aldcroft, *British Railways in Transition*, p.14-18; Cain, 'Railways 1870-1914: The maturity of the private system', p.115-117
[652] Simmons, 'South Western v. Great Western,' p.32
[653] *The Times*, Wednesday, Dec 14, 1910; pg. 13
[654] RAIL 1110/283, London and South Western Reports and Accounts, report and statement of accounts for the year ending 31 June 1891
[655] TNA, RAIL 411/613, Capital expenditure authorised, 01 January 1885 - 31 December 1889, p.2
[656] TNA, RAIL 411/613, Capital expenditure authorised, 01 January 1885 - 31 December 1889, p.17

£856 was spent on a new weighbridge at Wimborne.[657] Overall, the result was that Charles Owens, at that point the company's Goods Manager, could state that between 1885 and 1890 the LSWR had undertaken works which were 'commercially useful.'[658] Indeed, Scotter's obituary stated that he had improved 'the quality of…[station] accommodation generally'[659] and *Railway Magazine* in 1897 cited that a large number were rebuilt.[660]

The effect of Scotter's strategy of improving the LSWR's goods and passenger services and facilities was that revenue was generated to offset the continued decrease in the company's revenue per passenger, which fell from 11.92d in 1885 to 10.95d (11.04d) in 1892 (-11.90 percent). After almost continuous deterioration since 1874, the LSWR's passenger revenue per passenger train mile marginally increased between 1885 and 1892, from £50.04d to 50.39d (£49.97) (0.68 percent).[661] A similar pattern was repeated regarding the company's goods revenue. Per goods train mile this had fallen consistently since 1873; but this too largely stabilised between 1885 and 1892, only dropping a little from £67.87 to £67.59 (£67.03) (-0.42 percent).

Scotter's improvement of the LSWR's services, rolling stock and infrastructure supports Cain,[662] Aldcroft[663] and Arnold and McCartney's[664] arguments that railway companies acquiesced to trader's and passenger's demands after 1870. Yet, while all these academics argued that such policies, which were attempts to ward off additional infringement on their commercial freedom from government, depressed companies' profitability in the period, it can be concluded that in the LSWR's case after 1885 such a policy actually improved its finances. However, the LSWR's case may not be typical in the British railway industry. All these academics have simply argued that the industry as a whole started acting complying with demands for better services and facilities. Yet, none made the distinction between the policies of railways that principally carried freight, and those that were mainly passenger hauliers. Perhaps, as the LSWR's example may suggest, passenger-carrying railways had more scope to benefit financially from tailoring their services to their customer's needs; especially as additional passenger services were not as labour-intensive as goods services, and therefore may have been cheaper to operate. Although, without comparable case studies, and more evidence, this remains conjecture.

[657] TNA, RAIL 411/613, Capital expenditure authorised, 01 January 1885 - 31 December 1889, p.22
[658] *South Western Gazette*, March 1890, p.13
[659] *The Times*, Wednesday, Dec 14, 1910; pg. 13
[660] *Railway Magazine*, 'Illustrated Interviews, No.5: Sir Charles Scotter,' November 1897, p.388
[661] Board of Trade, *Railway Returns*,
[662] Cain, 'Railways 1870-1914' pp.120
[663] Aldcroft, *British Railways in Transition*, p.14-18
[664] Arnold, and McCartney, 'Rates of return', p.57

5.5. Conclusion

Scotter's effective reforms of the LSWR's management practices after 1885 give weight to this thesis' chief arguments. Firstly, given that within the company there was so little original advancement in its operating techniques between 1870 and 1911, such changes principally occurred when senior managers joined the company from other railways. Indeed, having come from MSLR, where he had acquired considerable experience of management in the wider British railway industry, Scotter swept away and reformed many of the obsolete management practices his predecessor had instituted, but which had persisted for decades.

Furthermore, Scotter's successful management of the LSWR demonstrated the extent to which the company's financial performance was dependent upon the creation of a post broadly equivalent to a modern chief executive. Scotter both had a major hand in the creation of this position, and then in fulfilling its responsibilities. As stated throughout this thesis, within such a functional management structure, control of investment and operational policy was highly centralised. Consequently, between 1870 and 1911 the LSWR's financial performance – and indeed its business results more generally – was highly dependent on the capacity of those above the department heads in the hierarchy to coordinate and oversee their affairs effectively, get them working together and provide them with leadership

Chapter 4 already showed that between 1870 and 1885 the board and then Scott's inability to coordinate the departments' actions adversely affected the company's management quality; leading to poor financial results. Scotter, however, gained authority over the company's senior managers, and was, therefore, able to modernise and reform the company's management practices, improving its financial performance.

5.5. Management stagnation 1892-1900

Scotter's improvements of the LSWR's managerial and operation performance evidences that he was undoubtedly one of Britain's most able railway General Managers after 1870. Yet, he did not enact the sort of innovative reforms of the LSWR's practices that Fay attempted after 1900 (see

Chapter 6) or that Gibb initiated within the NER from 1891 (see Chapter 1).[665] Indeed, the LSWR's management practices before 1900 were not greatly more advanced or sophisticated than those found in the majority of railway companies, and Scotter did not think outside the paradigms of railway management that were established within the industry by the 1880s. Consequently, once the company's management had been reformed along contemporary lines, and once its profitability had been vastly improved, the zeal Scotter had to advance and enhance its management practices dissipated. Yet, there was clearly considerable scope for further improvements, and after 1900, in response to a fall in the LSWR's profitability, senior managers were able to eliminate further operational inefficiencies (see Chapter 6).

The diminishing pace of operational reform within the LSWR after 1892 again demonstrates the important influences on the company's management quality between 1870 and 1911. By vastly improving the company's finances, and consequently its dividend and share price (which was the highest of any major British railway), Scotter was under no pressure from the board to take further action. Indeed, demonstrating that he had won the board's trust, by the 1890s, as the next section shows, he had almost decisive influence over the company's capital investment strategies. Furthermore, as most senior traffic managers in the 1890s had been trained during Scott's general managership and were, presumably, familiar with his methods of railway management, and given almost none of them had worked outside the company, it is unlikely they would have possessed the knowledge or experience to critically appraise or suggest improvements to the operating practices Scotter introduced. But even if they possessed such knowledge, the Traffic Department's promotional ladders promoted deference to authority, meaning it is unlikely they would have questioned his decisions anyway. Overall, as recent studies have argued of the British railway industry generally before 1900, even in the best performing railways there was considerable scope for cost reductions and efficiency gains to be disregarded.[666]

Ultimately, Scotter's case again supports the argument made throughout this thesis: where LSWR senior managers occupied positions of unassailable authority for long-periods with considerable scope to run their affairs as they so wished, their outlooks on railway management could potentially stagnate or become narrow. This possibly led to inefficiencies developing or persisting

[665] Irving, *The North Eastern Railway Company*, p.261-264

[666] Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig, and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?' p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632

within the company, because the value of existing operating practices were infrequently re-evaluated.

Section 2 - Major infrastructure improvements

5.6. Introducing investment

Before 1885 the directors dominated the LSWR's capital investment policies. Yet Scotter acquired decisive influence over them thereafter. It is plausible to suggest that he gained this high level of control over the company's strategic course because he had improved its financial performance and, given the directors had only learnt railway management from inside the company (see Chapter 3), they increasingly trusted his informed judgement. Using his control, Scotter gave the LSWR's investment strategies a higher degree of cogency than before, with capital projects largely serving his objectives of improving the company's efficiency and growing its business. Because of this they were largely successful. Only a small number of capital investment decisions were still taken in an *ad hoc* manner based on circumstances the company was facing; however only two of these are considered to have been disappointing.

Event	Year	Cost
Main Line Widening	Dec 1885-1897	£1,611,250
Southampton Docks purchase	1892	£1,177,086
New Plant, Graving Docks and Various Improvements	*1892-1897*	*£1,226,705*
Total Expenditure on Southampton Docks 1892-1897		***£2,403,791***
Meon Valley Railway construction	1897-1903	£619,021
Basingstoke and Alton Light Railway construction	1897-1901	£106,923
Waterloo and City Line	1892-1899	c.£500.000

Table 2: The LSWR's major capital investment decisions that will be studied in this chapter

This chapter analyses six of the LSWR's major investment decisions between 1885 and 1897 (Table 2). These were chosen because they significantly impacted on its financial performance during and after Scotter's general managership, or because they highlight important aspects of the company's decision-making processes.

5.7. Widening the Main Lines

Between 1885 and 1897 the LSWR's traffic continued to rise and its train mileage rose significantly from 11,369,244 miles to 16,367,906 (46.97 percent). This put considerable further pressure on the company's infrastructure through increasing congestion of the main lines,

particularly near London. It responded by initiating the widening of its main running lines near London to ease congestion. This was the company's most expensive on-going investment after 1885, costing £1,611,250 between 1885 and 1897, or 12.39 percent of its total capital expenditure in the period (Figure 7).

While Scott had initiated some widening of the LSWR's main lines after 1878 (see chapter 4), when Scotter became General Manager he started new such works and quickened existing ones as part of his general drive to improve the efficiency and quality of the company's train services.[667] Indeed, this was the first instance where Scotter's strong influence over the company's investment policies can be demonstrated. In February 1892 Portal, the LSWR's deputy-chairman, stated that widening works between Waterloo and Clapham Junction had taken six years, placing their initiation in 1886 when Scotter was making his initial impact on policy.[668] Furthermore, Appendix 5.1 shows that between 1880 and 1884 the length of the company's network that had more than two lines of rails rose from seven to fifteen miles, an average increase of 1.6 miles per year. Yet, by 1890 thirty-two miles of the LSWR's network had more than two tracks, meaning that the average expansion rate had risen to 2.38 miles per year. Particularly of note were the years between 1886 and 1888 when the length of the LSWR's network with more than two tracks jumped from eighteen to thirty-one miles.[669]

The effect these investments had on the LSWR's operational efficiency and financial performance is unclear given the limited evidence. They did ease congestion on the main lines near London, as Dutton stated in August 1889,[670] and so it can be suggested that they contributed to reducing the company's operating expenditure, discussed in Section 1, as trains were able to be managed more efficiently and their idling times were reduced.

[667] TNA, RAIL 411/69, Engineering Committee Letter and Minute Book, Memorandum from Jacomb to Macaulay – forwarded for Engineering Committee agenda, 23 October 1886; TNA, RAIL 411/255, Traffic Committee Minute Book, Minute 1060, 27 October 1886; TNA, RAIL 411/255, Traffic Committee Minute Book, Minute 1926, 7 November 1888; TNA, RAIL 411/257, Traffic Committee Minute Book, Minute 429, 4 December 1889

[668] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, Half Yearly meeting of the Proprietors, 4 February 1893, p.1

[669] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.65-66

[670] TNA, RAIL 1110/283, London and South Western Railway Reports and Accounts 1880-1898, Half Yearly meeting of the Proprietors, 8 August 1889, p.1

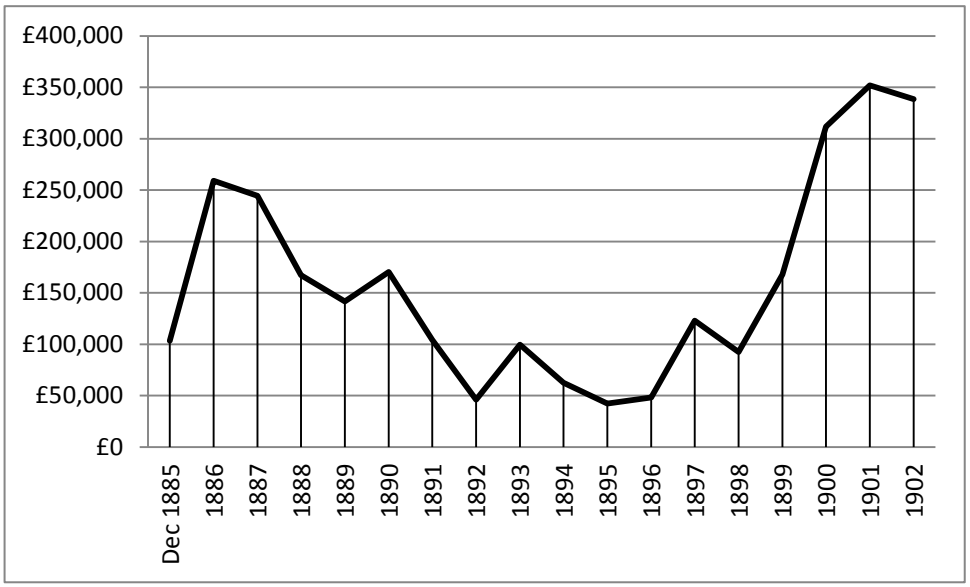

Figure 7: Capital spent on widening LSWR lines from December half-year 1885-1902, Source: TNA, RAIL 1110/283 and RAIL 1110/284, London and South Western Railway Reports and Accounts 1880-1922

Limited ideas

It is noticeable that despite their differing abilities as operational managers, both Scott and Scotter responded network congestion in the same way; by adding extra tracks to the main line. Given the congestion of the LSWR's network between 1870 and 1897, undoubtedly its main lines need additional capacity. Nevertheless, no evidence suggests that LSWR decision-makers considered solving this problem by using alternative or innovative means that may have been cheaper; like, for example, through improved signalling systems, like Fay introduced with limited success to the LSWR after 1900 (see Chapter 6).[671]

Fundamentally, between 1870 and 1900 LSWR decision-makers never developed significantly new responses to operational challenges because they were under no pressure from any source to do so. They still believed that traffic and revenue growth was guaranteed. This belief was discussed extensively in Chapter 4; however clearly Scotter shared it. In March 1895 he stated to an audience of dignitaries in Southampton his desire to play a role in the company's future success in a manner that suggested that he believed increased traffic and revenue was guaranteed.[672] Because decision-makers had this belief, when faced with increased network congestion they were under little pressure to alter or reassess the established costly solutions to it, and likely considered that in the long-term all such investment would be worthwhile.

[671] Faulkner and Williams*, The LSWR in the Twentieth Century*, p.186
[672] *The South Western Gazette*, March 1895, p.9

Furthermore, after 1885 decision-makers were not under any pressure from the capital markets to curtail investment in costly projects. With improving profitability the LSWR's share price rose from 122 to 224 pence between 1884 and 1897 (83.61 percent) and investors found the company an increasingly attractive investment opportunity.[673] The LSWR attracted finance easily during Scotter's General Managership; its authorised capital rose from £31,814,063 in 1884 to £41,906,931 in 1897 (31.71 percent).[674] Thus, expensive projects, such as the widening main lines, could proceed without fears that capital supplies would diminish. This fear was possibly lessened by Robert Williams joining the LSWR's board in 1892. He was on the Williams Deacon and Manchester and Salford Bank's board, which owned the Williams Deacon Bank who held the LSWR's money (see Chapter 3). Through this interlocking directorship the LSWR possibly accessed finance on favourable terms;[675] Williams possibly helped facilitate its loan capital growing from £10,843,821 in 1893 to £13,078,471 in 1894 (20.61 per cent), its highest year-on-year increase between 1870 and 1911.

Lastly, before 1900 the company's directors and senior managers possibly had little capacity to voluntarily generate new or innovative ideas when challenged by network congestion. After 1885 the LSWR directors' external business interests probably gave them little experience of industrial management that might have enabled them to think creatively about how to better manage the traffic. Additionally, because of the Traffic Department's rigidly hierarchical management structure, almost all traffic managers had little experience of railway management outside the LSWR and were likely inclined to see widening of its main lines as the only solution to relieving traffic congestion. But even if they had developed different ideas on policy from those at senior management level, the Traffic Department's promotional trees promoted deference to authority, meaning it would have been unlikely they would have criticised decisions made by their superiors, while innovative individuals, such as Fay, were hindered by the small number management posts from reaching positions where they could influence decision-making (see Chapter 3).

In sum, the LSWR's widening of is main lines before 1900 again demonstrates that the company's decision-makers were under little pressure to revaluate their existing concepts of railway management and operation. They had considerable freedom to neglect potential efficiency gains

[673] Various Sources: *South Western Gazette*, *Financial Times*
[674] Board of Trade, Railway Returns, 1884 and 1897
[675] *Railway Diary and Officials Directory for 1883*; *Railway yearbook for 1897*; *South Western Magazine*, March 1918, p.34

or productivity improvements, and fell back on established, but possibly not the most efficient solutions to recurring challenges.

5.8. Southampton Docks

The LSWR's purchase of Southampton Dock Company (SDC) in 1892 was the clearest example of Scotter's dominant influence over the company's investment policies after 1885. The Southampton docks provided the LSWR with a large portion of its business and in 1885 9.88 percent of all goods the company hauled passed through them.[676] Yet, in the 1880s shipping lines moved elsewhere because the SDC was progressively unable to accommodate the larger ships that were being built. In 1882 the Union Steam Ship Company stopped sailing to Southampton and Scott negotiated to prevent the Peninsular and Oriental company (P&O) leaving. The *SWG* reported in 1882 that 'traffic...is rapidly and surely declining...' and '...shipping companies were availing...themselves of the dock accommodation which London alone can supply...'[677] Thus, with trade diminishing, the SDC's dividend payments fell from £2.00 per ordinary share in 1881 to nothing in 1885. Consequently, the SDC could not raise the capital to build modern dock accommodation and attract new shipping, and in 1892 the SDC Chairman, Steuart McNaughten, stated that the company's authorised capital was £2,037,547, yet that £386,298 had not materialised.[678] Thus, by the mid-1880s the LSWR's largest single source of goods traffic was failing.

Numerous efforts were made in the 1880s to reinvigorate the SDC's business. In 1885 the Corporation of Southampton attempted to pass a bill whereby it would lend the SDC £220,000 to construct a deep water dock.'[679] This failed and the LSWR was approached. The railway agreed to raise stock of £250,000 which would be subscribed to the SDC and then spent on a new deep water dock. Additionally, LSWR directors would occupy four seats on the SDC's board and the LSWR engineer would have final say on all works.[680] The bill passed and construction of the Empress Dock began in May 1886.[681] Yet, when it opened in 1890[682] £200,000 to £300,000 was

[676] TNA, RAIL 1066/2735, Parliamentary Bills and Minutes of Evidence, etc., Southampton Docks, 1892, Mr Steuart McNaughten, 28 April 1892, p.24
[677] *The South Western Gazette*, August 1882, p.4-5
[678] TNA, RAIL 1066/2735, Parliamentary Bills and Minutes of Evidence, etc., Southampton Docks, 1892, Mr Steuart McNaughten, 28 April 1892, Nos.5 and 6 p.3
[679] TNA, RAIL 411/7, LSWR Court of Directors Minute Book, 26 March 1885, Minute 1675
[680] TNA, RAIL 411/211, LSWR Special Committee Minute Book, 28 October 1885
[681] TNA, RAIL 411/7, LSWR Court of Directors Minute Book, 13 May 1886, Minute 1982
[682] J.P.M Pannell, *Old Southampton Shores*, (Newton Abbot, 1967) p.126

still required to make it fully functional,[683] which, unsurprisingly, the SDC did not have. The capital from the 1886 agreement had been expended, as well as £50,000 of an advance upon the SDC's debenture bonds that the LSWR agreed to in 1889.[684] Furthermore, in 1891 only £34,265 out of £84,000 of a new second preference share issue by the SDC had been subscribed to.[685] The SDC was facing ruin and consequently a proprietors' meeting in February 1891 voted that negotiations be opened with the LSWR for purchase.[686] The LSWR agreed to this[687] and the take-over bill received Royal assent in July 1892, with control being transferred in October.[688] The purchase of the docks cost the LSWR £1,177,086, or 3.53 percent of its total capital expenditure between 1870 and 1911.

It was Scotter who pushed for the purchase of the SDC, as he recognised that this was the only way the railway could prevent its traffic diminishing.[689] Indeed, because steamship companies had moved from Southampton, the proportion of the LSWR's goods tonnage generated by the docks had already fallen from 16.92 percent in 1881 to 9.88 percent in 1886.[690] Thus, Scotter stated in May 1892 that unless the LSWR acquired and then augmented the docks he expected 'the trade of the town and of the port will diminish.'[691] Dutton, the company chairman, expressed similar sentiments in a letter to the SDC's board in 1891;[692] while his successor from 1892, Portal, intimated the same.[693] Beyond the company other interested parties also felt the LSWR needed to purchase the SDC to safeguard its trade. In 1892 the *Hampshire Observer* stated that there was 'consensus of opinion amongst businessmen' that the acquisition of the SDC by the railway was the only way it could be returned to profit and attract custom.[694]

The LSWR's purchase of SDC was, therefore, forced on its decision-makers because of their need to safeguard the railway's trade. Indeed, their public and private statements betray that if it were

[683] TNA, RAIL 1066/2735, Parliamentary Bills and Minutes of Evidence, etc., Southampton Docks, 1892, Mr Steuart McNaughten, 28 April 1892, No.139 p.34
[684] TNA, RAIL 1066/2735, Parliamentary Bills and Minutes of Evidence, etc., Southampton Docks, 1892, Mr Steuart McNaughten, 28 April 1892, No.15 p.4
[685] TNA, RAIL 1066/2735, Parliamentary Bills and Minutes of Evidence, etc., Southampton Docks, 1892, Mr Steuart McNaughten, 28 April 1892, No.15 p.4
[686] TNA, RAIL 870/4, General Meetings of the Southampton Dock Company, 17 February 1891, p.114
[687] TNA, RAIL 411/8, LSWR Court of Directors Minute Book, 7 January 1892, Minute No.1020
[688] TNA, RAIL 411/8, LSWR Court of Directors Minute Book, 7 July 1892, Minute No.1118
[689] *South Western Gazette*, May 1904, p.12; *Railway Magazine*, May 1904, p.12; *South Western Gazette*, Jan 1911, p.9
[690] TNA, RAIL 1066/2735, Parliamentary Bills and Minutes of Evidence, etc., Southampton Docks, 1892, Mr Steuart McNaughten, 28 April 1892, p.24
[691] TNA, RAIL 1066/2735, Parliamentary Bills and Minutes of Evidence, etc., Southampton Docks, 1892, Mr Charles Scotter, 2 May 1892, No. 1260 p.135
[692] TNA, RAIL 870/22, Southampton Dock Company, Court of Directors, 1 October 1891, p.294
[693] *South Western Gazette*, 1 December 1892
[694] *Hampshire Observer*, Unknown Date, quoted in *South Western Gazette*, July 1892, p.3

not for the SDC's imminent failure, they would have not taken the decision they did. In 1891 Dutton wrote to the SDC board stating that 'it should be distinctly understood that the Railway Company are not to be regarded as in any sense seeking to acquire the docks.'[695] Furthermore, Scotter was asked at the parliamentary enquiry if such docks should be handed over to a railway companies 'rather than be kept in the public interest?' He responded that 'the railway company do not want it.'[696] Furthermore, the LSWR's heavily support for the SDC before 1892 also shows that the railway only purchased the docks when no other option was available to save it. Therefore, while acquiring the docks extended the LSWR's empire, its acquisition was not a case of corporate empire-building, but, to a large extent, self-preservation.

The LSWR's development of the Southampton docks will be covered in more detail in Chapter 6. However, in line with Scotter's goal of 'expanding the concern',[697] between 1892 and 1897 the company expended £1,226,705 on augmenting the dock's facilities. This investment steadily grew the number of shipping lines sailing from Southampton from 1892; for example the Inman line abandoned Liverpool for Southampton in 1893.[698] Accordingly, the trade of the docks increased significantly between 1892 and 1897. The tonnage of goods passing through them rose over this period by 80.40 percent, with the coal traffic increasing by 116.88 percent. The number of passengers that passed through the docks also grew from 122,000 in 1892 to 214,400 in 1896, or by 75.74 percent.[699] This upsurge in trade positively impacted on the LSWR's finances. Between 1892 and 1897 the net revenue the company received from all maritime activities increased from £200,410 to £407,826, or by 103.05 percent; while the proportion of overall company revenue docks income constituted rose from 6.28 percent to 10.07 percent over the same period.[700]

The LSWR's decision to purchase and expand of the Southampton docks helped improve its profitability after 1892; these were the company's most remunerative capital investments between 1870 and 1911. As Chapter 6 demonstrates, even when growth in the company's rail-borne traffic slowed in the 1900s, the docks' trade continued to increase rapidly, off-setting a decline in its average revenue per ton of merchandise hauled.

[695] TNA, RAIL 870/22, Southampton Dock Company, Court of Directors, 1 October 1891, p.294
[696] TNA, RAIL 1066/2735, Parliamentary Bills and Minutes of Evidence, etc., Southampton Docks, 1892, Mr Charles Scotter, 2 May 1892, No. 1259 p.135
[697] *Railway Magazine*, May 1904, p.417
[698] *The Times*, Wednesday, 14 December 1910, p. 13
[699] *London Standard*, Thursday, 13 October 1898
[700] Board of Trade, *Railway Returns*, 1892 and 1897

1892	*LSWR hauled In/Out of the Docks*	*Total LSWR Hauled*	*Docks Proportion*	*All LSWR Revenue*	*Approx. Docks Traffic Revenue*
Cargo tonnage inwards/outwards	400,530 (421,611)+	1,778,944	22.52%	£739,699	£166,580 (£167,980)*
Sea and rail-borne coal tonnage	170,544 (179,520)+	2,736,806 (Minerals)+	6.23%	£284,394 (Minerals)	£17,722 (£17,871)*
Other Marine Income					
LSWR Steamship Income					£159,433 (£160,773)*
Net Docks Income (October-December)					£6,113 (£6,164)*
Total					**£303,724 (£306,276)***
1897	*LSWR hauled In/Out of the Docks*	*Total LSWR Hauled*	*Docks Proportion*	*All LSWR Revenue*	*Approx. Docks Traffic Revenue*
Cargo tonnage inwards/outwards	718,552 (756,370)+	2,274,047	31.60%	£839,091	£265,135 (£279,089)*
Sea and rail-borne coal tonnage	369,871 (389,338)+	3,135,521 (Minerals)+	11.80%	£329,357 (Minerals)	£38,851 (£40,896)*
Other Marine Income					
LSWR Steamship Income					£179,926 (£189,396)*
Docks Income					£63,620 (£66,968)*
Total					**£547,532 (£576,349)***

Table 3: The traffic and trade of the Southampton Docks, 1892-1897, Source: *London Standard*, Thursday, 13 October 1898; TNA, RAIL 1110/283 and RAIL 1110/284, London and South Western Reports and Accounts, 1880-1922; *Railway Magazine*, April 1909, p.402-406. *Inflation adjusted figures from 1892 +Portal stated in 1897 that the railway carried away ninety-five percent of all docks traffic. Therefore, the figures in brackets are an estimate of the full tonnage that passed through the docks

The acquisition and expansion of the Southampton Docks again demonstrates that between 1870 and 1911 the introduction into LSWR of new ideas on policy and strategy was largely dependent on the appointment of individuals to senior management positions who had worked outside the company; this is one of this thesis' main arguments. In the early 1890s few individuals within the LSWR had the necessary experience of managing docks to understand their potential value to a railway's finances. The board's many long-standing directors had few external business experiences that could have informed their thinking on dock ownership and management. Indeed, despite four directors receiving positions on the SDC's board, none sat on other dock companies' boards, and, consequently, their experience of docks management was likely shaped by overseeing a dock company they knew was failing. Thus, in these positions they presumably

had little scope to learn what constituted 'good' docks management.[701] It is unlikely the introvert careers of the LSWR's traffic management class would have given them knowledge of how docks were operated (see Chapter 3).

Contrastingly, Scotter's experience of docks administration was considerable. He had been the MSLR's continental agent from 1866 to 1872 and Goods Manager from 1873 to 1885,[702] and therefore had worked extensively with that company's Grimsby Docks at a time when they were expanding rapidly.[703] He therefore understood the value and importance of the LSWR acquiring and developing the SDC, and pushed these polices to great effect. Indeed, it is also plausible to suggest that if he had not been appointed LSWR General Manager in 1885, the company's interactions with the SDC would have taken a far less successful course.

5.9. Line building

In late-1890s Scotter was instrumental in the building of three lines that influenced the LSWR's financial performance. The LSWR had wanted to connect to the City (of London) since Waterloo Station had opened in 1848.[704] Thus, when a deep-level tube line that ran between these places was promoted, Scotter took the opportunity to augment the LSWR's business further, and recommended to the board in October 1891 that the company support the line.[705] While remaining independent, the Waterloo and City Railway (WCR) received £500,000 and four LSWR directors on its board. After opening in 1898, the LSWR worked the line for fifty-five percent of the revenue; and if the WCR's profits were insufficient for it to pay a three percent dividend on the ordinary stock the LSWR would make up the difference.[706]

The available evidence suggests the WCR's initial impact on the LSWR's finances was beneficial. The WCR's trade was large, with passenger numbers growing from 3,485,556 to 4,546,535 between 1899 and 1902. Undoubtedly, the vast majority of these customers would have used the LSWR either before or after they had travelled on the WCR, and many would have taken up the 'through' season tickets the former company offered.[707] Indicative of WCR's healthy trade, after 1901 its profits were high enough to pay the guaranteed dividends itself. Furthermore, in each

[701] TNA, RAIL 411/211, LSWR Special Committee Minute Book, 28 October 1885
[702] TNA, RAIL 463/305, Manchester, Sheffield and Lincolnshire Railway Company, Staff register 1, p.398
[703] Hodgkins, *The Second Railway King*, p.401; George Dow, *Great Central: Volume Two – The Dominion of Watkin*, (London, 1962), p.164-165
[704] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.25-26
[705] TNA, RAIL 411/8, Court of Directors Minute Book, Minute No.981, 9 October 1891
[706] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.25-27
[707] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.28

year between 1899 and 1906 the LSWR made a net profit from the line of around £19,000.[708] Tentatively, it can therefore be suggested that this attempt by Scotter to 'expand the concern' was successful.

Conversely, the construction of the Basingstoke and Alton Light Railway (BALR) and Meon Valley Line (MVL) was not initiated by Scotter for the purposes of growing the LSWR's business. Like many of the company's line building projects before 1884 (see Chapter 4) they were built to protect the company's regional hegemony.

In 1896 the GWR had projected the Portsmouth, Basingstoke and Godalming Railway which cut across the company's territory south of Basingstoke and passed through the Meon Valley. The Act failed in parliament in 1896.[709] However, it spurred Scotter into action to secure this sparsely populated region for the company.[710]

Figure 8: The Meon Valley Line between Alton and Fareham. Source: Author's collection

In June 1896 Scotter inspected the Meon Valley and suggested to the LSWR's board that a line be constructed from Alton to Fareham. They immediately approved this plan[711] and it was built between 1897 and 1902 (Figure 8). Despite being single tracked, it was built to main line standards and possessed the space for a second line of rails.[712] Consequently, its cost was high at £619,021, or 9.88 percent of the company's total expenditure in the years of its construction. Indeed, it was the LSWR's most costly line building project between 1885 and 1911, and the outlay on it was considerably greater than the expenditure on the company's on-going extensions in the West Country.

[708] TNA, RAIL 1110/284, LSWR reports and accounts, 1899 to 1906
[709] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.71
[710] R.A. Stone, The Meon Valley Railway, (1983)
[711] TNA, RAIL 411/10, Court of Directors Minute Book, Minute 591, 25 June 1896
[712] *South Western Gazette,* July 1903, p.7

The line was largely unsuccessful. In 1897 it was described by the company's chairman, Portal, as being of 'great advantage not only to the War Office, but to the public generally.'[713] Despite this optimism, when it opened in 1903 the revenue generated never met expectations and after a few years services were cut back[714] to such an extent that in January 1904 residents along the line began asking for extra trains.[715] Stone argued that the line 'never prospered,' and it was a drag on the LSWR's financial performance, although the extent to which this was so is unknown.[716]

Figure 9: The Basingstoke and Alton Light Railway. Source: Author's collection

Similarly, Scotter investigated the district between Basingstoke and Alton with Portal in late-October 1896. He recommended to the board that a line be built in the region under the Light Railways Act of 1896, which allowed railway companies to construct lines without a parliamentary act. Again, the board immediately accepted this recommendation[717] and at a meeting of the Light Railway Commissioners on 28 January 1897 Scotter gave evidence and the BALR's order passed.[718] Mr Jeffreys, a LSWR shareholder, recounted at the February 1897 half-yearly proprietor's meeting that in front of the commissioners Scotter had 'conducted the case as well as any leading council could have done.'[719] The order was finally confirmed in December.[720] The cost of building the line was small at £106,338, which during the years of its construction (1898-1901) constituted only 2.47 percent of the LSWR's total capital expenditure.[721] Opened in May 1901, the Basingstoke and Alton Light Railway was loss-making as its traffic was very light. Only months later Scotter commented that the line was 'not likely to be of great benefit', given he perceived it as feeding main line services[722] and by 1913 it was losing more than £4000 per year.[723]

[713] RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922, 4 February 1897, p.1
[714] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.74
[715] TNA, RAIL 411/265, Traffic Committee Minute Book, Minute 675, 27 January 1904
[716] Stone, *The Meon Valley Railway*, p.56
[717] TNA, RAIL 411/10, Court of Directors Minute Book, Minute 619, 1 October 1896
[718] *The Morning Post*, Friday, 29 January 1897, p.3
[719] RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922, 4 February 1897, p.4
[720] TNA, RAIL 411/10, Court of Directors Minute Book, Minute 842, 9 December 1891
[721] RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922, 1897-1901
[722] Scotter quoted in Dean, Martin, Robertson, Kevin and Simmonds, Roger, *The Basingstoke and Alton Light Railway*, (Crowcombe, 1998), p.39-49
[723] Martin Dean, Kevin Robertson and Roger Simmonds, *The Basingstoke and Alton Light Railway*, (Southampton, 2003) p.49

Despite it being unlikely that the MVL and BALR cut into the LSWR's profit margins to any great degree – the BALR's loss of £4000 in 1913 only constituting around 0.0987 percent of company expenditure[724] – they still added excess route mileage to the company's network for low returns. These cases therefore support Dodgson's and Cain's arguments that British railways' constructed lines that performed poorly financially for territorial defence before 1900.[725]

Like the LSWR directors before 1884, Scotter could initiate the construction of such lines because there was little limiting his liberty of action. As Section 5.8 discussed, as the LSWR's financial performance improved significantly after 1885, the company could access capital easily and the shareholders remained passive in its decision-making process. Additionally, LSWR decision-makers did not fear traffic growth would stop, so they likely perceived that unprofitable lines could be cross-subsidised by profitable ones for years, or even decades, if need be. When the company's territory was threatened, the urge to defend it overrode any concerns Scotter may had about the lines' profitability. Indeed, reflecting his lack of detailed interest in how profitable the lines might be, and revealing a lack of project appraisal before the decisions were made, all he could vaguely say about the BALR's future prospects was that it would be of 'material assistance' to the districts through which it passed.[726]

Ultimately, therefore, the factors that lay behind Scotter's initiation of the building of the MVL and BALR highlight that, despite his impressive skills as an operational manager, his underlying belief systems about how railways conducted their business were almost identical to those of the board in the 1870s and early-1880s. This therefore reiterates what was argued in the case of the widening of the company's main lines: before 1900 the LSWR's decision-makers had considerable scope to invest as they so wished and, thus, there was nothing pressuring them to reform their established responses to recurrent problems.

5.10. Conclusion

Between 1885 and 1897 Scotter's capital investment strategy was unquestionably more cogent than the board's had been before then. In that period the LSWR's board took investment decisions in an uncoordinated manner in response to events occurring beyond their control. The directors possessed no more than vague objectives when making capital investments, for

[724] RAIL 1110/284, London and South Western Reports and Accounts, 1913
[725] Cain, 'Railways 1870-1914: The maturity of the private system', pp.115-117; Dodgson, 'New, disaggregated, British railway total factor productivity growth estimates', p.639
[726] *The Morning Post*, Friday, 29 January 1897, p.3

example 'opportunistic territorial consolidation.' This is possibly why the purchase and building of weakly performing lines consumed most of the company's capital before 1884, while the railway's most pressing need, improvement of its infrastructure, was not addressed (see Chapter 4).

Undoubtedly, some of the decisions Scotter made were reactions to external events, three of which have been studied here: the Southampton Dock purchase, and the building of the MVL and BALR. Nevertheless, most of the capital projects he initiated were guided by the operational strategies he had established for the LSWR after 1885 of expanding the concern and improving its operational efficiency. They mostly succeeded in their aims. For example, the Southampton Docks' expansion and the financial support for the Waterloo and City line expanded the company's business considerably. Furthermore, the widening of the company's main lines and the carriage and wagon works' removal to Eastleigh considerably improved the railway's operational efficiency (see Section 1).[727] In contrast with the LSWR's investment practices before 1884, these examples demonstrate that the company's capital projects between 1870 and 1911 were, to large extent, most successful when they were serving a well-developed overarching strategic objective.

Section 3 – Conclusion

Fundamentally, Scotter's improvement of the LSWR's financial performance after 1885 hinged on two factors: his ability to get the department heads working together towards common goals and his reformation of the company's inefficient operational practices along modern lines. Through describing these facets of his general managership this chapter has, therefore, strengthened this thesis' two main arguments, as will now be discussed.

One of this thesis' main arguments is that between 1870 and 1911 the LSWR's ability to mitigate potential problems caused by functional department structures, such as department heads acting independently and ignoring the overall revenue position of the concern, depended on how effectively those above them in the hierarchy provided them with effective oversight, coordination and leadership. This chapter has supported this assertion. By quickly gaining authority over the department heads, Scotter transformed the position of LSWR General Manager into something analogous to a modern Chief Executive. Consequently he was able to get the heads working together in line with his two corporate objectives: augmenting the

[727] *Western Gazette*, Friday 24 August 1900, p.3; *The Star*, Tuesday 12 June 1900

company's business and, most importantly, decreasing its excessive operating costs. Scotter's case therefore supports Channon's suggestion that the operational effectiveness of nineteenth-century British railways was, possibly, contingent on whether General Managers had the 'authority, skill and energy' to persuade department heads to cooperate.[728]

Describing Scotter's General Managership has also strengthened this thesis' other main argument. As is discussed throughout, between 1870 and 1911 within the LSWR, and particularly the Traffic Department, there was very little innovation in, or development of operating techniques, which meant in many cases the value of established practices were not reappraised and inefficiencies developed. In the Traffic Department's case this was, as Chapter 3 discussed, because traffic managers had all passed through its insular and rigid clerical promotional ladders and, as such, had limited scope to think creatively or question established practices they had worked with for decades. Consequently, the advancement or improvement in managerial techniques within the company was largely dependent on the appointment of new senior managers who had worked outside it. Indeed, in 1885 Scotter brought to the LSWR his wide-ranging experience of management practices in the wider British railway industry. This gave him the capacity to effectively oversee and critique the department heads' activities, but also he likely suggested ways they could better manage their affairs. Secondly, he was able to considerably reform and modernise the Traffic Department's management and the company's obsolete train control practices. Lastly, his experience of working with docks facilities made him acutely aware of the value the Southampton Docks could be to the LSWR's business.

Collectively, these factors helped significantly improve the LSWR's financial performance after 1885. There was another important factor that aided this process. By 1892 Scotter had gained decisive influence over the company's major investment policies, possibly because after his successes the directors, who had few external experiences of railway management, came to trust in his judgment (see Chapter 3). Before 1884, and despite the company having relative easy access to capital, the LSWR's board had taken uncoordinated approach to investment which had, possibly, harmed its operational efficiency through restricting the spending on infrastructure improvements. However, the majority of the LSWR's capital investments in the 1890s were guided by Scotter's two main strategic objectives. Thus, they better served the company's needs and contributed to improving its profitability.

[728] Channon, *Railways in Britain and the United States, 1830-1940*, p.42

Yet, despite Scotter's considerable and impressive improvement of the LSWR's financial performance after 1885, facets of his General Managership demonstrate that he still held many traditional and long-established concepts of railway management. His reforms of the LSWR's inefficient management practices only remodelled them into resembling those found within most British railway companies at the time. The company retained the functional department structure, control of decision-making remained highly centralised, operating statistics were no more advanced that the train mile, and its management class was still deferential to authority and institutionalised. Furthermore, Scotter's solutions to operational problems, such as the congestion of the LSWR's main lines, replicated those utilised in previous decades; innovative problem solving was lacking within the company. Finally, like many managers and directors before him, Scotter reacted to threats to the company's territorial dominance by building railways, possibly believing that if they were unremunerative or performed poorly financially they could be cross-subsidised by profitable routes for years after their opening.

Thus, while Scotter was an exceptional General Manager, he was not a radical one. Absent from his General Managership was any form of operational or organisational innovation like Gibb enacted within the NER (see Chapter 1).[729] Indeed, because Scotter had transformed the LSWR into one of the best financially performing British railways, and given no director or senior manager had the knowledge to experience to contradict his actions, between 1892 and 1897 there was seemingly no pressure on him look for further efficiencies through managerial improvements or innovations. Consequently, as Chapter 6 shows, before 1900 the LSWR's operations were not as efficient as they could have been. This case therefore supports recent scholars' views that in the period British railways' decision-makers had scope to neglect operational efficiencies and potential productivity gains.[730]

Nonetheless, it is inappropriate to say that there was 'management failure' within the LSWR during Scotter's General Managership, as Cain and Aldcroft argued occurred in the British railway industry generally before 1900.[731] Compared with other railways the LSWR's management quality was very high by 1897: Scotter had made numerous remunerative investment decisions, its employees and departments were working in a unified and cohesive manner, its train services

[729] Irving, *The North Eastern Railway Company*, p.261-264

[730] Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632

Aldcroft, *British Railways in Transition*, p.14-18; Cain, 'Railways 1870-1914: The maturity of the private system', pp.115-117

were run efficiently, and its business was growing at a quicker rate than before 1885. Thus, by 1897 it would be more suitable to label the LSWR's operating performance as being 'sub-optimal'.

Section 4 – Appendices

5.1. Width of the LSWR's main lines 1880-1890

	1880	1881	1882	1883	1884	1885	1886	1887	1888	1889	1890
One	223	223	223	220	210	210	228	228	228	230	221
Two	490	490	489	490	497	532	513	536	543	553	579
Three	2	2	2	2	3	3	4	8	14	14	15
Four (or more)	5	6	7	9	12	15	14	16	17	17	17
Number of miles above two lines	7	8	9	11	15	18	18	24	31	31	32
Proportion of miles above two lines	0.97 %	1.11 %	1.25 %	1.53 %	2.08 %	2.37 %	2.37 %	3.05 %	3.87 %	3.81 %	3.85 %

Source: Board of Trade, *Railway Returns* 1880-1890

Chapter 6 – Company policy during Charles Owens' tenure 1898-1911

When Charles Owens became General Manager in 1898, the LSWR was one of the best financially performing British railway companies. Nevertheless, only three years after his appointment, like most railway companies in Britain, [732] its trading circumstances had completely changed, and the company's managers and directors were faced with challenges which none of their predecessors had had to deal with.

Firstly, traffic growth, which had been constant from 1838 to 1897, halted and the number of passengers the LSWR conveyed stabilised after 1899, largely because of competition from trams in suburban districts. Goods traffic growth also slowed, and between 1900 and 1911 the tonnage the LSWR hauled only grew by 9.55 percent. LSWR officials were also challenged by material, fuel and wage costs increasing significantly in the late 1890s. Appendix 6.1 shows that the price the LSWR paid per unit for various materials used by the Engineering Department, as well fuel costs per ton, all rose significantly after 1897. Furthermore, in the same period wage costs per train mile grew from 15.56d (16.38d)[733] in 1897 to 16.62d (16.69d) in 1901. These increases contributed to raising the company's OR from 57.49 percent in 1897 to 62.44 percent in 1900; and reducing its ROCS from 4.96 in 1897 to 4.54 in 1902 (five-year moving average). [734] Furthermore, pieces of government legislation also constrained decision-makers' freedom of action. The 1893 Regulation of Railways Act limited the hours railway employees could work; while the 1894 Railway and Canal Traffic Act fixed the maximum rates railways could charge for goods haulage at 1892 levels.[735] Lastly, as with most British railway companies, the buoyant capital supplies the LSWR had enjoyed before 1900 disappeared. Consequently, combined with the fact the board had initiated many expensive infrastructure projects between 1897 and 1900, decision-makers lacked the capital to invest in projects that may have improved the company's profitability.

This chapter discusses how, when their freedom of action was thus constrained, LSWR decision-makers responded to the company's reduced profitability after 1897. It argues that overall limited progress was made. Despite the company remaining an above-average performer in the

[732] Gourvish, *Railways and the British Economy, 1830-1914*, p.44; Irving, 'The Profitability and Performance of British Railways,' p.49 Pollins, *Britain's Railways an Industrial History*, p.93
[733] All inflation adjusted figures are in brackets and have been equalised at 1898 levels.
[734] Board of Trade, *Railway Returns*, 1897 and 1901; TNA, RAIL 1110/284, London and South Western Railway Reports and Accounts 1898-1922; Mitchell, Chambers, and Crafts, 'How Good Was The Profitability Of British Railways,' p.807
[735] Gourvish, *Railways and the British Economy*, p.47

British railway industry, it financial position deteriorated before 1911: its ROCS declined from 4.54 percent in 1902 to 4.42 percent in 1910 (five-year moving average); its OR increased from 62.44 percent in 1900 to 63.82 percent in 1911; and its total expenditure per train mile grew from 41.91d (40.68d) to 44.02d (39.80d) over the same period. Some of this increase can be attributed to rising rates and taxes; which grew from 5.87 percent of company expenditure in 1900 to 6.93 percent in 1911. Yet, if this expenditure is eliminated from the equation, the company's expenditure per train mile still increased between 1900 and 1911 from 39.44d (38.29d) to 40.96d (37.04d), while its OR grew from 58.77 percent to 59.39 percent. [736]

This chapter argues that the LSWR's financial performance did not improve after 1900 principally because of the careers of the company's decision-makers. Firstly, because Owens, the General Manager, and Holmes, the Superintendent of the Line, had spent all their careers within the Traffic Department's introvert and rigid promotional ladders, they found it difficult to reform their thinking on railway management, abandon long-established management practices or innovate. Furthermore, these managers' perspectives on company policy were supported, seemingly uncritically, by a small cadre of long-standing directors who held similar viewpoints. Lastly, the Locomotive Superintendent (Chief Mechanical Engineer from 1904), Drummond, was unwilling to adapt his management style and ideas on locomotive design, which he had developed in the 1870s and 1880s, to the company's changing requirements later in his tenure. In consequence of these factors, after 1902 innovation within the company stalled, efficiencies persisted unchallenged, external threats to the business were not effectively combatted and, ultimately, its profitability did not improve.

Section 1 – Capital investment, 1897-1901

6.1. Introduction

This section examines the LSWR's capital investment strategies between 1897 and 1901, as its capital projects were an important influence on how decision-makers reacted to the railway's decreased profitability after 1900.

As Chapter 5 described, before 1898 Scotter, as General Manager, had significant influence over when and where the company invested its capital. Yet, after 1898 it was the board which formulated and enacted capital investment policy; while the senior managers arranged the details. This shift occurred because on retirement Scotter was elevated to the LSWR's board. In

[736] Board of Trade, *Railway Returns*, 1900 and 1911

this position he retained, and perhaps even enhanced, his control over the company's investment strategies. Indeed, Chapter 3 showed how he was highly active in the company's affairs. His dominance of the company's investment policies was reinforced between 1898 and 1902 by the board possessing two ex-LSWR railwaymen (Scott and Macaulay) and two long-standing members (Campbell and Govett). All these individuals had worked with Scotter since his appointment as General Manager and, presumably, trusted his judgement given his successful improvement of the company's finances (see Chapter 3).

Consequently, as Scotter remained the driving force behind the LSWR's investment strategies after 1898, the capital projects the company initiated served the corporate objectives he had established as General Manager. Further investment in the Southampton Docks fitted his goal of 'expanding the concern'; while the widening of the company's main lines, the locomotive works' movement from Nine Elms to Eastleigh, the augmentation of stations and yards to deal with traffic increases, and Waterloo Station's rebuilding, all improved the efficiency and quality of the LSWR's train services.

As a result of these projects the LSWR's investment in its infrastructure was heavy between 1898 and 1901, and constituted £4,310,404, or 12.69 percent of its total capital expenditure between 1870 and 1911. Indeed, the company spent more capital between 1898 and 1905 than in any other period of its history. The next section describes the company's investment into its operational infrastructure, while section 6.3 discusses the expansion of the Southampton Docks. Lastly, section 6.4 explains why the board felt it could increase the company's capital burden so extensively between 1898 and 1901.

6.2. Adapting to traffic growth

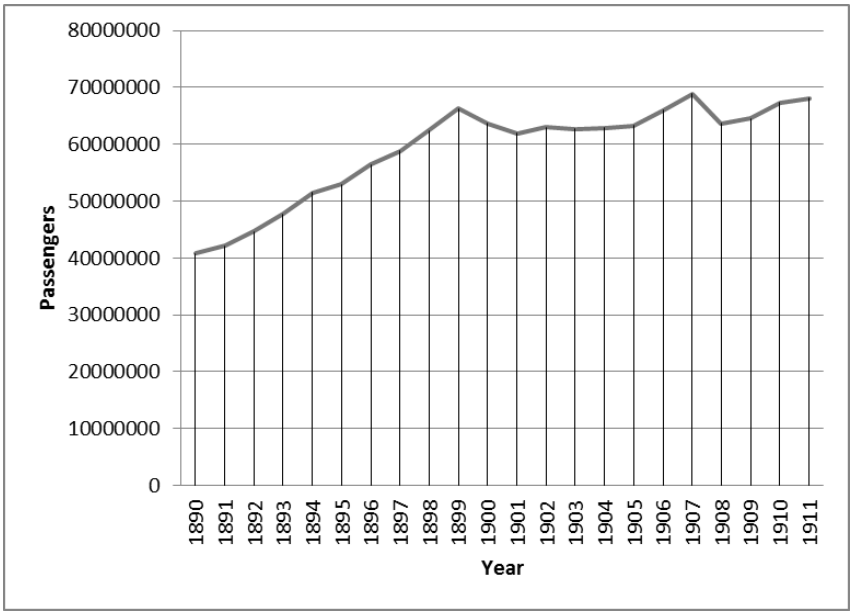

Figure 1: Number of passengers conveyed by the LSWR between 1890 and 1911, Source: Board of Trade, *Railway Returns*

Between 1890 and 1900 the number of passengers the LSWR conveyed grew considerably (Figure 1). Table 1 indicates that over this period the number conveyed per passenger train mile rose by 14.47 percent; while the number carried per carriage and per route mile also increased by 30.98 percent and 19.30 percent respectively.

	1890	1895	1900	Overall increase
Passengers Conveyed	40,772,873	52,934,040	63,710,860	56.26%
Passenger Train Miles	9,357,014	10,816,322	12,773,066	36.51%
Passengers per Passenger Train Mile	4.36	4.89	4.99	14.47%
Passenger Carriages	2,104	2,218	2,510	19.30%
Passengers per Passenger Carriage	19,379	23,866	25,383	30.98%
Company Route Mileage Worked	836	890	914	9.33%
Passengers per Route Mile	2,104	2,218	2,510	19.30%

Table 1: Increase of LSWR passenger traffic expressed numerous ways, Source: Board of Trade, *Railway Returns.*

Consequently, between 1898 and 1901 56.29 percent of the LSWR's capital expenditure went on augmenting its 'lines open for traffic.'[737] This investment took four main forms: developing the capacity and facilities at the company's stations and yards; the continued widening of its main lines; the removal of the locomotive works from Nine Elms to Eastleigh; and the complete rebuilding of Waterloo Station. These investment decisions will now be described.

[737] TNA, RAIL 1110/284, London and South Western Railway Reports and Accounts 1898-1922

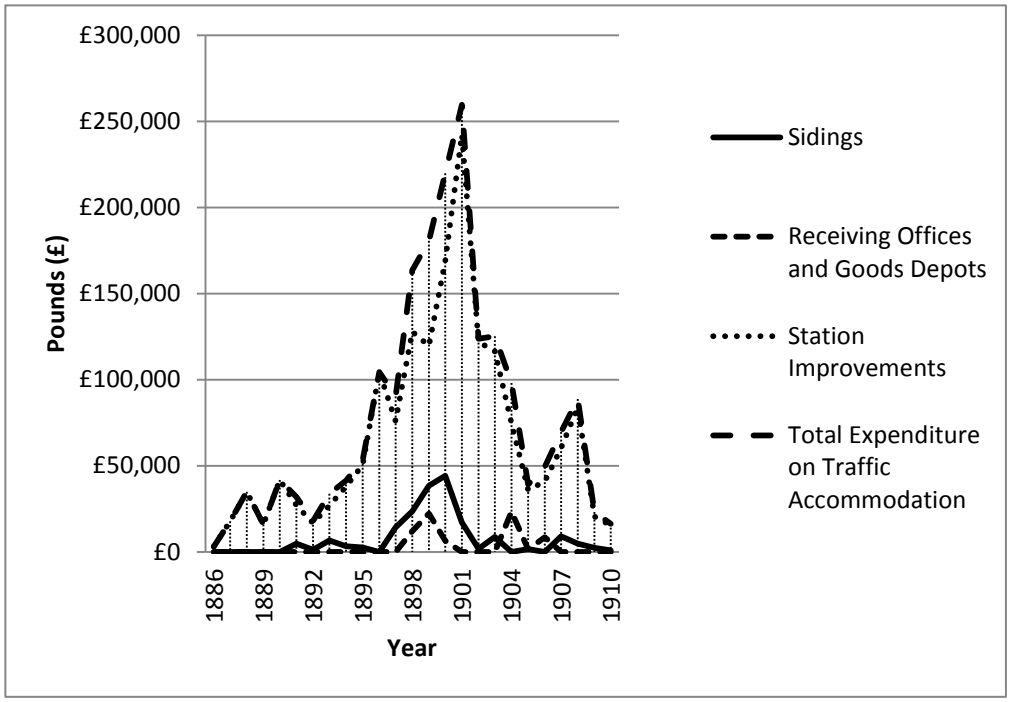

Figure 2: LSWR Expenditure at stations and yards, 1892-1906, Source: TNA, RAIL 1110/283 and RAIL 1110/284, London and South Western Railway Reports and Accounts 1880-1922

From around 1895, and particularly after 1898 when he was on the board, Scotter initiated the augmentation of station and good yards facilities, which enabled them to handle more efficiently the company's higher volumes of traffic. For example, between 1870 and 1890 the LSWR had only spent £4,555 improving Hampton Court Station.[738] But in 1897 a plan was approved to enlarge the passenger accommodation at a cost of £14,500.[739] Furthermore, in 1898 plans were approved for additional sidings, a goods shed and a ten ton crane at a further cost of £3,000.[740] As such, the investment at Hampton Court was higher after 1897 than in any period since the station's opening in 1849.[741] As Figure 2 shows, from 1898 the capital the LSWR expended on developing similar facilities around its network was considerable. Between then and 1905 it constituted £1,210,231, or 10.49 percent of the total capital spent during Owens' General Managership.[742]

[738] TNA, RAIL 411/241 to RAIL 411/257, Traffic Committee Minute Books, Various Minutes
[739] TNA, RAIL 411/261, Traffic Committee Minute Book, Minute 156, 3 February 1897
[740] TNA, RAIL 411/261, Traffic Committee Minute Book, Minute 1193, 8 June 1898
[741] TNA, RAIL 411/2, Court of Directors Minute Book, Minute 1404, 12 January 1849
[742] RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922, 9 February 1899, p.1

By the late-1890s another problem was that increasing passenger traffic meant the main lines outside Waterloo station were again becoming progressively congested. Complaints regarding trains' poor punctuality thus became more frequent. In August 1899, for example, a meeting was held in Woking to discuss 'the grave loss and grave inconvenience caused to the residents on main lines of the London and South Western Railway by the gross unpunctuality of the train service.'[743] In September 1898 'W.M.' wrote to the *Western Gazette* stating that 'for the callousness or incapacity of its management (probably both) I doubt if any railway company in England (or, for that matter out of it) can compete with the South Western.'[744] The congestion was even acknowledged by the LSWR's chairman, Portal, who stated in February 1899 that 'those who travelled on their system must be aware of the congested condition which obtained particularly in the neighbourhood of that great city.'[745]

Furthermore, Waterloo Station was difficult for passengers to use.[746] Expansions in 1878 and 1885 had created three interconnected stations which between them had eighteen running lines but only ten platform numbers.[747] In 1889 Jerome K. Jerome fictionally recorded the confusion at the station in *Three Men in a Boat*: 'We got to Waterloo at eleven, and asked where the eleven-five started from. Of course nobody knew; nobody at Waterloo ever does know where a train is going to start from, or where a train when it does start is going to, or anything about it.'[748] These problems with the LSWR's infrastructure therefore seriously affected the company's public reputation; although to what extent they affected its operational efficiency is unclear.

To ease congestion, which other railway companies were experiencing at the time,[749] Scotter initiated further widening of the LSWR's main lines in 1896[750] and, consequently, in 1905 *Railway Magazine* commented that the company had undertaken a 'transformation which would seem incidental to the development of a great railway company.'[751] The work was started in 1897.[752] Two extra lines were added between Waterloo and Worting Junction, south of Basingstoke on

[743] *Surrey Mirror*, Friday, 04 August 1899, p.4
[744] *Western Gazette*, Friday 16 September 1898
[745] RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922, 9 February 1899, p.1
[746] *Morning Post*, Friday, 22 December 1899, p.7; *Hampshire Advertiser*, Saturday, 16 June 1900, p.6; *Western Gazette*, Friday, 12 May 1899, p.2
[747] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.7
[748] Jerome K. Jerome, *Three Men in a Boat*, (London, 1889), p.69
[749] Irving, *The North Eastern Railway Company*, p.166-168
[750] TNA, RAIL 411/6, Court of Directors Minute Book, Minute 626, 1 October 1896
[751] *Railway Magazine*, April 1905, p.322
[752] *Railway Magazine*, April 1905, p.322

the Main Line, and on the Windsor Line between Waterloo and Clapham Junction.[753] Table 2 shows that between 1898 and 1904 the extent of the company's route mileage possessing above two running lines rose from 32.93 miles to 62.57 miles, or by 90.01 percent. The capital cost of these widening works was high. Between 1897 and 1905 £2,180,881 was invested in the project; or 25.04 percent of the company's total capital expenditure in these years.[754]

Number of running lines	1898	1900	1902	1904	1906	1908
One	245.23	261.05	264.2	302.24	307.73	308.86
Two	591.76	590.14	584.08	573.23	571.08	575.45
Three	12.89	14.51	15.78	12.66	4.79	4.8
Four	16.23	16.23	29.99	44.85	53.14	52.95
Five	0	0	1.2	1.24	1.26	1.23
Six	3.81	3.34	2.44	2.04	1.35	1.24
Seven	0	0.48	1.3	1.78	3.40	1.99
Eight	0	0	0	0	0	2.01
Total Mileage above two lines	*32.93*	*34.56*	*50.71*	*62.57*	*63.94*	*64.22*
Percentage of company mileage above two running lines	3.79%	3.90%	5.64%	6.67%	6.78%	6.77%

Table 2: Track width of the LSWR's lines, 1898-1908, Source: TNA, RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922

In 1900 the LSWR also began to rebuild Waterloo Station to ease main line congestion and improve its navigability for passengers.[755] The directors' first proposal to increase the station's capacity in 1897 had been to add an extension on its south side.[756] However, local opposition thwarted the Bill and the decision was taken to completely rebuild the site.[757] The revised plans, which received royal assent in August 1899,[758] added to the station four more platforms and seven more lines,[759] augmenting its capacity by twenty percent.[760] Yet again, the capital cost of the project was considerable. When in early 1923 the Southern Railway (who took over the LSWR in that year) closed the Waterloo rebuilding account, the total cost had been £2,269,354.[761] Between 1903, when the major construction work began, and 1911, the LSWR spent £502,418 on

[753] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.64-66
[754] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.64-66
[755] *Railway Magazine*, June 1911, p.451
[756] TNA, RAIL 411/10, Court of Directors Minute Book, Minute 150, 9 December 1897
[757] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.9
[758] TNA, RAIL 411/26, Court of Directors Extracts, 28 September 1899, p.133
[759] *Morning Post*, Friday, 22 December 1899, p.7
[760] *South Western Gazette*, 1 November 1901, p.7
[761] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.18

the project or 4.35 percent of its total capital expenditure during Owens' General Managership.[762]

The Locomotive Works

In 1897 the LSWR also decided to relocate the company's locomotive works from Nine Elms to Eastleigh. Possibly this decision was inevitable. The transfer of the works into 'the country' had been occasionally considered since 1860[763] and the carriage and wagon works had moved to Eastleigh in 1889. However, with goods traffic passing at the Nine Elms yard growing and requiring more space, and with part of the locomotive works scheduled to be demolished to accommodate line widenings, the board decided to move them to Eastleigh also. This was despite the Locomotive Superintendent, Dugald Drummond, being reluctant for unknown reasons that this should occur.[764] Plans for the move began in 1897[765] when eighty-two acres of land at Eastleigh were purchased.[766] The works' designs were drawn up in September 1898[767] and finally approved by the Locomotive Committee in February 1900.[768] The works eventually opened in January 1909.[769] The total cost to build and equip them was £393,717, or 3.41 percent of the company's overall capital expenditure between 1898 and 1911.

Conclusion

Between 1897 and 1901 the LSWR initiated numerous on-going capital projects that increased the capacity of its infrastructure. How they affected its financial performance is very unclear given the available evidence. Because the Waterloo rebuilding finished in 1922,[770] it cannot be ascertained how this improved the company's operational performance before 1911, if it did at all. Furthermore, it is impossible to judge how the expansion of goods yards and station facilities impacted on the company's efficiency, given such improvements were spread out across its network. However, the widening of the main lines likely eased congestion on them, possibly improving the train services' efficiency, for example through a reduction of idling times. Indeed, the company's expresses services to both competitive and non-competitive destinations were

[762] TNA, RAIL 1110/284, London and South Western Reports and Accounts, June 1897 half-yearly report
[763] TNA, RAIL 411/217, Special Committee Book, Special Committee on Nine Elms Station Accommodation, 19 December 1860, p.112
[764] Chacksfield, *The Drummond Brothers*, p.95
[765] TNA, RAIL 1110/284, London and South Western Reports and Accounts, 1903-1911
[766] *Railway Magazine*, May 1898, pp.417
[767] RAIL 411/190, Locomotive Committee Minute Book, Minute 1192, 28 September 1898
[768] RAIL 411/192, Locomotive Committee Minute Book, Minute 1192, 28 February 1900
[769] RAIL 411/196, Locomotive Committee Minute Book, Minute 507, 20 January 1909
[770] Faulkner and Williams, *The LSWR in the Twentieth Century,* 22-23

accelerated after 1903, likely indicating that main line congestion had been reduced.[771] Conversely, the Eastleigh works, which contemporary reports suggest were designed to promote efficient working,[772] did not seemingly improve the company's expenditure on locomotive construction and maintenance. Materials costs fluctuated in this period and are therefore unreliable for measuring the works' efficiency. The best, but highly imperfect measure of this is wage costs, which increased per train mile from 1.27d (1.22d) to 1.48d (1.28d) between 1904 and 1910.[773] Yet, this increase may not necessarily mean that the new works were less efficiently run than the Nine Elms works, and other factors possibly played a role in pushing up costs, for example increased staff numbers. Therefore, all that can be tentatively suggested about the capital projects the LSWR started between 1897 and 1901 is that they had both positive and negative effects on the company's profitability.

6.3. The Southampton Docks

Southampton Docks

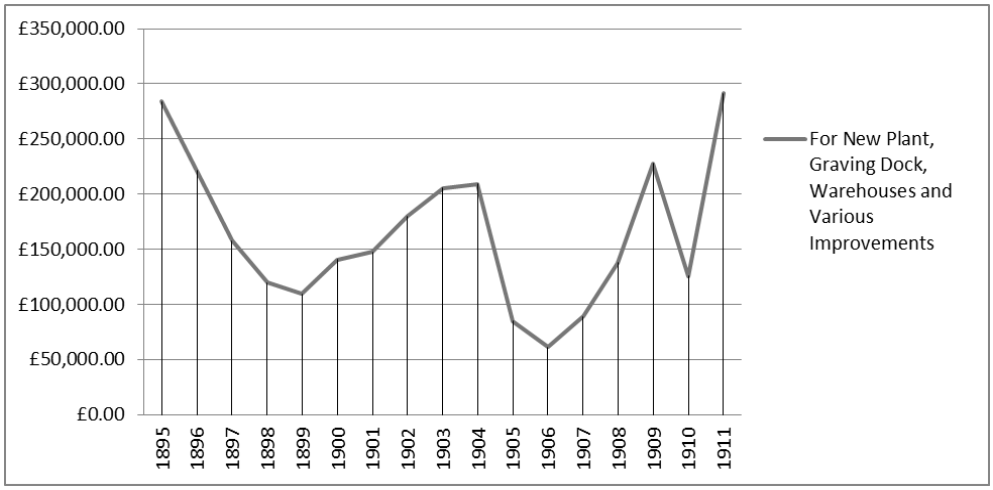

Figure 3: Annual capital expenditure on the Southampton Docks, 1895-1911, Source: TNA, RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922

After 1897 the LSWR also continued to expand the Southampton Docks in response to growing shipping volumes, increasing vessel sizes and even occasional visits from Royal Navy warships.[774] Between 1899 and 1904 the company constructed Britain's largest graving dock,[775] the Trafalgar Dock, which opened in 1905. The capital investment in this and other improvements at the docks,

[771] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.165-167
[772] *Railway and Travel Monthly*, June 1910, p.41-49
[773] TNA, RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922
[774] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.142
[775] *Western Times*, Monday, 23 October 1905

which is shown in Figure 3, cost the company between 1899 and 1904 £991,990; or 8.60 percent of its total capital expenditure during Owens' General Managership.[776]

Towards the end of the decade further decisions to enlarge the Southampton Docks were not simply driven by traffic growth and increasing vessel sizes. As Chapter 3 discussed, Lord Pirrie joined the LSWR board in June 1907.[777] He was chairman of Harland and Wolff, the Belfast shipbuilder and a director of the Oceanic Steam Navigation Company, which was known more widely as the White Star Line (WSL).[778] Pirrie's appointment to the LSWR board was a reflection of the stronger links that had been established between the railway and these companies; Harland and Wolff had established a repair station at the Southampton Docks in April 1907, while the WSL started sailing from them in June.[779]

As stated, once Pirrie became director he was appointed to the Docks and Marine Committee, so his experience and knowledge could be utilised to maximum effect by the company.[780] From here he helped to direct investment in the docks towards facilities for his companies; in October 1907 the LSWR began work on 'White Star' dock to accommodate the WSL's new ships (constructed by Harland and Wolff), *Titanic* and *Olympic*.[781] Between then and the June half-year 1911 the LSWR expended £726,294 on docks improvements; or 6.29 percent of the company's capital expenditure during Owens' General Managership (Figure 3). [782]

This investment was a rare example of practical decision-making on the LSWR's part. The relationship with Pirrie anticipated a growth in business with the WSL. Through the first decade of the twentieth century the WSL was not the only the company to use Southampton. Twenty-one steamship lines sailed from the docks by 1909. [783] Pirrie, along with Sir Owen Phillips who also had positions in shipping, would have brought to the railway considerable experience and insight that probably helped it attract shipping lines to Southampton and better manage the business there.[784]

[776] TNA, RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922
[777] *Derby Daily Telegraph*, Thursday, 27 June 1907
[778] *Railway Magazine*, April 1909, p.403
[779] Faulkner and Williams*, The LSWR in the Twentieth Century*, p.142
[780] *South Western Magazine*, June 1918, p.80
[781] Faulkner and Williams*, The LSWR in the Twentieth Century*, p.144
[782] Faulkner and Williams*, The LSWR in the Twentieth Century*, p.144
[783] *Railway Magazine*, April 1909, p.402-406
[784] *Directory of Directors*, (London, 1910)

The LSWR's investment in the Southampton Docks resulted in trade growing dramatically in the 1900s. As Table 3 highlights, between 1897 and 1908 the cargo tonnage passing through the docks increased from 756,370 to 1,113,132 (47.17 percent), while in and out coal tonnage increased from 389,338 to 598,100 (53.62 percent). Furthermore, between 1896 and 1908 the number of passengers embarking and disembarking at Southampton increased from 214,400[785] to 268,549, or by 25.26 percent.[786]

The Docks' Impact

1897	*LSWR hauled In/Out of the Docks*	*Total LSWR Hauled*	*Docks Proportion*	*All LSWR Revenue*	*Approx. Docks Traffic Revenue*
Tons of Cargo Inwards/Outwards	718,552 (756,370)	2,274,047	31.60%	£839,091	£265,135 (£279,089)*
Tons of Coal Inwards/Outwards	369,871 (389,338)	3,135,521 (Minerals)	11.80%	£329,357 (Minerals)	£38,851 (£40,896)*
Other Marine Income					
LSWR Steamship Income					£179,926 (£189,396)*
Docks Income					£63,620 (£66,968)*
Total					**£547,532 (£576,349)***
1908	*LSWR hauled In/Out of the Docks*	*Total LSWR Hauled*	*Docks Proportion*	*All LSWR Revenue*	*Approx. Docks Traffic Revenue*
Tons of Cargo Inwards/Outwards	1,057,495 (1,113,132)	2,505,040	42.21%	£1,004,774	£424,154 (£410,016)*
Tons of Coal Inwards/Outwards	568,195 (598,100)	4,119,279 (Minerals)	13.79%	£460,323 (Minerals)	£63,495 (£61,379)*
Other Marine Income					
LSWR Steamship Income					£231,556 (£223,837)*
Docks Income					£289,193 (£279,553)*
Total					**£1,008,398 (£974,785)***

Table 3: The traffic and trade of the Southampton Docks in 1897 and 1908, Source: *London Standard*, Thursday, 13 October 1898; TNA, RAIL 1110/284, London and South Western Reports and Accounts, 1880-1922; *Railway Magazine*, April 1909, p.402-406. *Inflation adjusted figures from 1892. Tonnage figures in brackets denote the full total passing through the docks; the figure above them are the approximate amount the LSWR hauled based on the statement that the company hauled ninety-five per-cent of all traffic passing through them, as outlined in Chapter 5.

[785] *London Standard*, Thursday, 13 October 1898
[786] *Railway Magazine*, April 1909, p.402-406

The data does not exist to show precisely how the docks impacted on the LSWR's finances after 1900, but by utilising a counterfactual scenario, whereby the SDC had failed in 1892 and did not put any traffic on the railway thereafter, a rough calculation can be made. If the cost of running the docks and their approximate income (calculated in Table 3) is removed from the LSWR's overall expenditure and receipts, the company's OR would have theoretically been 2.16 per cent higher that it actually was in 1897, at 59.64 per cent, and 6.50 per cent higher in 1908, at 70.90 per cent. This suggests the LSWR's purchase expansion of the Southampton Docks was beneficial to its finances.

The value of the expansion of the Southampton Docks to the LSWR is possibly further highlighted by examining changes in the nature of the company's goods traffic from the late-1890s. It has been argued by scholars that the 1894 Railway and Canal Traffic Act, which fixed the maximum rates railways could charge for goods haulage at 1892 levels, was, as Cain argued, a 'millstone around companies' necks', as after 1900 they could not raise rates to offset increased working costs (see Chapter 1).[787] In an attempt to understand how the Act affected the LSWR's finances, Figure 4 shows the company's average income per ton of merchandise and minerals transported between 1888 and 1910, and its revenue per head of livestock conveyed. Between 1892 and 1899 the company's revenue per ton of merchandise conveyed fell from 99.79d (102.29d) to 87.26d (87.26d), or by 12.56 percent. Possibly, this decline was caused by the Railway and Canal Traffic Act and the LSWR's inability to raise freight rates above 1892 levels. In February 1894, Portal, the chairman, stated that because the LSWR served mainly agricultural districts, the agricultural depression of the period was reducing the company's goods revenues. Consequently, the Act may have meant the company was unable to raise rates to offset the income they were losing because of this depression – but without further evidence this is unclear.[788]

[787] Cain, 'Traders versus railways: the genesis of the Railway and Canal Traffic Act of 1894,' p.80
[788] TNA, RAIL 1110/282, LSWR Reports and Accounts, 1880-1895, Half-yearly meeting of proprietors, 8 February 1894, 7 February 1895 and 8 August 1895

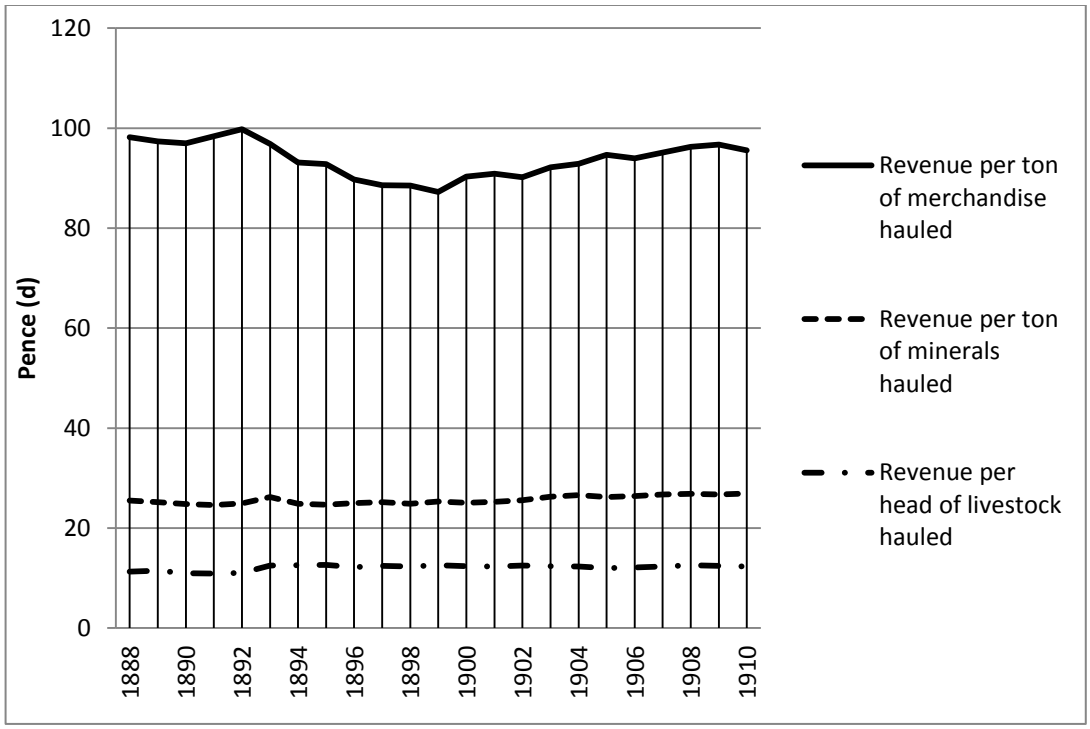

Figure 4: LSWR average revenue per ton of merchandise and minerals, and livestock hauled in constant prices. Source: Board of Trade, *Railway Returns*

Factors other than the Act may also have diminished the LSWR's average revenue per ton of merchandise hauled. Cain argued that in the 1890s many companies began offering special lower rates to farmers if, rather than sending small loads of goods to a host of stations, they agreed to send mixed or aggregated consignments.[789] The LSWR was no exception. In 1896 Portal stated that the company had made rates reductions varying from fourteen to thirty-six percent for various articles. It was willing to go further but 'there must be two-fold co-operation – the farmer must combine and send his produce in bulk, and then the Railway Company would do what it could to make the combination easy.'[790] This suggests that after 1892 the average revenue per ton of merchandise conveyed also fell because to some extent it reduced rates.

Whatever the cause, the effect of the LSWR's declining average income per ton of merchandise hauled on its profitability can be approximately calculated. If this had not fallen after 1892 and stayed at 98.40d (the company's average revenue per ton hauled between 1883 and 1892) by 1899 the company's operating ratio would have been 1.41 percent lower than it was in reality. This suggests that the LSWR's declining average revenue per ton of merchandise hauled diminished its profitability. Nonetheless, given the LSWR predominantly carried passengers this

[789] P.J. Cain, 'Railways and price discrimination: the case of agriculture, 1880-1914,' *Business History*, 18 (1976), p.197
[790] *North Devon Journal*, Thursday 13 February 1896, p.6

decline likely impacted far less on its finances than it did on northern railways who were chiefly freight carriers; but again this cannot be proven.

However, it can be suggested that Southampton Docks' increasing trade started to have an important impact on the LSWR's financial performance after 1899, and Figure 4 shows that between then and 1908 the company's average revenue per ton of merchandise hauled began increasing. Before describing how the docks improved the company's average revenue per ton of merchandise hauled, it is useful to explain briefly how the railways' determined what they charged for the transportation of different types of goods after 1892. The rates were categorised into 'classes.' Classes 'A' to 'C' covered those goods that were conveyed in bulk, such as coal and grain, and, consequently, their transportation rates were low. Classes 1 to 5 covered the rates for transporting more valuable goods. These commodities' classifications were determined based on a number of factors: their worth, how likely they were to be damaged in transit, their weight in proportion to their bulk, and the nature of their packing and handling costs. The charges for conveying goods in Class 1, for example ale and sugar, were the lowest, while those in Class 5, such as cigars and musical instruments, were carried at the highest rates.[791]

As stated, after 1892 the trade at the Southampton Docks grew considerably. Therefore, determining the types of merchandise that was landed at the docks, and their classifications, is useful for understanding how this traffic growth may have impacted on the LSWR's average revenue per ton of merchandise hauled. Two articles in *Railway Magazine* from 1900[792] and 1909[793] mentioned thirteen commodities that were landed at the Southampton Docks which had overseas origins. These were classified as follows:

Class 2 - apples, bacon, wool

Class 3 - hops, tobacco, wine, spirits

Class 4 - oysters, skins, meat

Class 5 - cigars, bicycles, fruit (The fruit came from the Cape and I have put them in the 'fruit - hothouse' classification.)[794]

[791] Edwin A. Pratt, *Railways and their Rates: With an Appendix on the British Canal Problem*, (London, 1905), p.60-61

[792] *Railway Magazine*, January 1900, p.76

[793] *Railway Magazine*, April 1909, p.401

[794] HCPP, Board of Trade, 1892 [C.6832] Railway and Canal Traffic Act, 1888. An analysis of the Railway Rates and Charges Order Confirmation Acts, 1891 and 1892, showing (a.) A list of the acts. (b.) A list of the railway companies affected. (c.) The classification of merchandise traffic. (d.) The general conditions under which the maximum rates and charges can be made. (e.) The schedules of the maximum rates and charges,

Most commodities mentioned were categorised in the upper classes. It can, therefore, be suggested that the docks' growing and varied trade meant the LSWR was moving larger volumes of merchandise that generated more revenue per ton than locally produced goods that were in lower classes. For instance, the LSWR had a healthy trade in Hampshire strawberries for six weeks a year during the harvesting season.[795] Strawberries were, however, classified in Class 2, whereas exotic fruits grown overseas, which were likely landed at Southampton throughout the year, were in Class 5. Consequently, per ton the latter possibly generated more revenue for the LSWR over longer periods of time.[796]

Thus, the development of the trade at Southampton, and the more diverse range of products this meant the LSWR conveyed, possibly offset the decreased revenue per ton of British-produced merchandise it transported. This is tentatively supported by the counterfactual scenario above. In 1908 the LSWR's OR stood at 64.40. Whereas in the counterfactual scenario, where the company charged an average of 98.40d for transporting a ton of merchandise in every year after 1892, the year this figure started falling, the company's OR would have also been 64.40 percent by 1908. The fact that these figures are the same again suggests that the LSWR's increasing revenue per ton of merchandise after 1908 contributed to improving the company's finances and lowering its OR.

Overall, it is likely the development of the SDC positively impacted on the LSWR's finances after 1892.[797] Not everyone has agreed: Faulkner and Williams argued the docks were 'a better investment for the nation than for the LSWR shareholders.'[798] Yet, this argument was only based on the docks' working expenses and did not consider the considerable traffic they put onto the company's system.

August 1892, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1892-069585:2 (8 January 2013)

[795] Norman H. Pattenden, *Special Traffic Arrangements– South Western Circle Monograph No. 4,* (unknown, 2008), p.52

[796] HCPP, Board of Trade, 1892 [C.6832] Railway and Canal Traffic Act, 1888. An analysis of the Railway Rates and Charges Order Confirmation Acts, 1891 and 1892, showing (a.) A list of the acts. (b.) A list of the railway companies affected. (c.) The classification of merchandise traffic. (d.) The general conditions under which the maximum rates and charges can be made. (e.) The schedules of the maximum rates and charges, August 1892, http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1892-069585:2 (8 January 2013)

[797] *Railway Magazine*, April 1909, p.402-406

[798] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.149

6.4. The capital burden, 1898-1901

Overall, the capital projects that were intimated between 1897 and 1901 were the last, largest and most expensive demonstrations of the factors that shaped the LSWR's investment policies between 1870 and 1900. The directors and managers were under little pressure from any quarter to interrogate in detail the quality of the investment decisions they made. Shareholders were passive in the company's decision-making processes; subordinates were deferential to authority; the LSWR could access capital relatively easily; and, crucially, decision-makers believed that the company's traffic and revenue would continually grow, which in turn would make every investment worthwhile in the long-term (see Chapter 4). They therefore had considerable freedom to invest where and how they so wished.

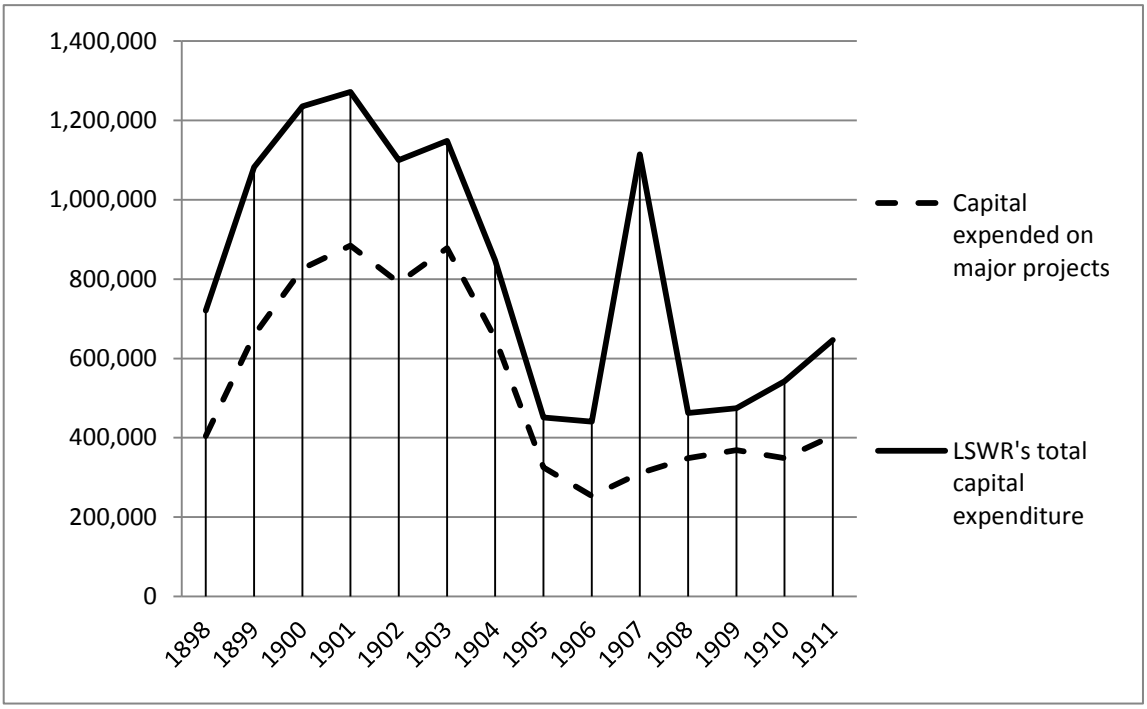

Figure 5: LSWR capital expended on major projects and its total capital expenditure, 1898-1911. Source: RAIL 1110/284, London and South Western Reports and Accounts, 1898-1922

The absence of pressure on LSWR decision-makers to curtail investment is demonstrated by the fact that the projects mentioned above committed the company to the highest levels of capital expenditure in its history. The capital spent on them amounted to £8,042,753, or 69.70 percent of the total between 1898 and 1911. Furthermore, between 1898 and 1904 the total outlay on them was £5,685,041, or 17.05 percent of the LSWR's capital spending between 1870 and 1911. Thus, Figures 5 and 6 demonstrate when this expenditure was at its highest levels.

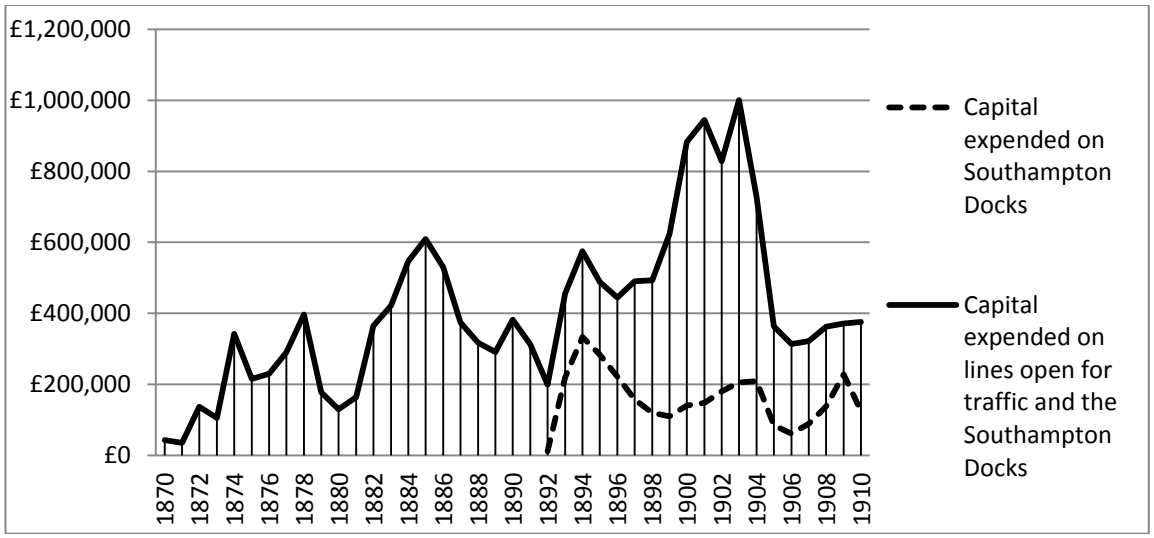

Figure 6: LSWR Expenditure on 'Lines open for Traffic' and the Southampton Docks, 1870-1911; Source: RAIL 1110/281/283/284, London and South Western Reports and Accounts, 1834-1922

Furthermore, as Chapter 5 discussed, because there were few constraints on LSWR decision-makers' freedom of action before 1900, when faced with recurrent problems they simply replicated solutions they had utilised in previous decades and were not compelled to search for alternatives that possibly could have been more cost efficient. For example, the widening of the main lines in response to congestion had been previously undertaken in the 1880s. Furthermore, the reconstruction of Waterloo to increase its capacity was similar to the enlargements of the station in 1878 and 1885.[799] Yet, the LSWR directors did not investigate how to ease main line congestion through alternative means, for example through improving methods of train control (see section 6.13 for an example), that may have been less expensive. Thus, while many of these investments were possibly necessary, in some cases this lack of innovation in investment policy may have raised the company's capital burden excessively . Indeed, these projects likely explain why the LSWR's ROCS fell from 4.92 in 1897 to 4.54 in 1902 (five-year moving average).[800] Thus, as this thesis argues throughout, this case shows that where decision-makers could occupy posts for decades with few constraints on their freedom of action, their thinking on railway management and operation could stagnate to the detriment to the company's financial performance.

Overall, the scale and expense of the capital projects the LSWR's directors initiated between 1897 and 1901, which they expected would continue for many years thereafter, evidence their confidence in guaranteed future traffic growth and the relative ease with which they could access capital. This is unsurprising, for more than thirty years they had never had to worry about such

[799] Unknown Author, 'The Waterloo Station Extension', *British Architect*, 24 (1885, 4 September), p.108
[800] Mitchell, Chambers and Crafts, 'How good was the profitability of British railways 1870-1912?' p.807

things changing. However, as Sections 3 and 4 show, after 1900 these projects placed such a burden on the LSWR's capital account that, in a period when its access to finance was limited, this restricted decision-makers' ability to invest in projects that may have improved the company's diminished profitability. Indeed, as Gourvish argued of British railway companies' investment policies generally in the late-1890s, the LSWR 'probably rushed into projects too enthusiastically.'[801]

Section 2 – Wage increases 1897-1901

6.5. Wages

The LSWR's wage bill increased from constituting 26.00 percent of gross revenue in 1897 to 26.98 percent in 1901. This contributed to increasing the company's costs and decreasing its profitability in this period (fuel and material costs also increased in this period – see appendix 6.1). Given that decision-makers had considerable control over the LSWR's wage policies, why they raised employees' pay and increased the company's operational expenditure needs to be examined.

Some historians have argued that after 1870 greater government legislation over railway employees' conditions of work increased companies' costs. Particularly notable was the 1893 Regulation of Railways Act which attempted to limit the hours employees worked, which theoretically augmented the number of individuals railways had to employ.[802] Yet, this legislation seemingly did not increase the LSWR's wage costs. Between 1892 and 1895 the four major departments' expenditure on wages actually declined as a proportion of company revenue from 27.36 percent to 26.00 percent, while the cost per train mile fell from 15.47d (15.60d) to 15.41d (16.18d). This tentatively suggests, as some have argued, that the LSWR somehow got round the regulations contained in the Act.

Major increases in the LSWR's wage bill did occur in the late 1890s. This was because senior managers and directors altered employees' working conditions and pay. For example, in 1899 Campbell (Chairman) stated that wage increases in the half-year to 31 December 1899 been had not due to additional staff being employed, but because of 'concessions they found it necessary to make in every department, involving additional pay, shorter hours of work, and extra hours of

[801] Gourvish, *Railways and the British Economy*, p.45
[802] Gourvish, *Railways and the British Economy*, p.53; Cain, 'Railways 1870-1914: The maturity of the private system', pp.109

Sunday duty, and this excess amounted to about £22,900 in the traffic and £13,200 in the locomotive departments.'[803]

Unfortunately, only some of the detail of these changes has been found. Paid annual leave was extended to some employees. In 1895 signalmen at principal boxes east of Woking were given six days, while in 1898 shed porters at Nine Elms received three days leave for their first five years' service and another day each subsequent year until they reached six. The most significant change to LSWR employees' pay and conditions began in January 1898 when all Traffic Department staff became entitled to a half day's pay for up to six hours of Sunday duty and a full day's pay for over six.[804] Overall, these and other changes to employment conditions, which were not the result of any government legislation, meant that by 1901 the chairman reported that the LSWR was employing more staff than in 1897.[805] Partly as a consequence, the company's overall expenditure on wages per train mile rose between 1897 and 1901 from 15.56d (16.38d) to 16.62d (16.69d).

This raised wage bill cannot be considered to be the result of unions' pressure for better pay and conditions. Despite railway unions getting stronger in this period nationally,[806] they never possessed many members within the LSWR. Scotter claimed in 1907 that only five percent of all employees were in the largest railway union, the ASRS, and when there was a national railway strike in 1911 only two of the company's employees came out. Indeed, because senior LSWR officials did not fear union activity, in 1907 they dropped the company's subscription to the anti-union body, the National Free Labour Association.[807]

Unlike many railway companies, for example the NER, whose officials met their employees' requests for better pay and conditions with a hard-line approach,[808] it can be suggested that the LSWR employees' received improved employment conditions because their directors and managers possessed a highly paternalistic attitude towards those below them and, as such, were more willing to accede to their requests. Indeed, in 1901 at a headquarters staff dinner Owens stated that he 'knew of no railway company which has so many social festivities as the South-

[803] TNA, RAIL 1110/284, London and South Western Railway Half-yearly general meeting, Thursday 8 February 1899
[804] Williams, *London and South Western Railway: Volume 2*, p.332; TNA, RAIL 411/261, 8 December 1897 Traffic Committee Minute Book, Minute 827
[805] TNA, RAIL 1110/284, London and South Western Railway Half-yearly general meeting, Thursday 6 February 1902
[806] Howell, *Respectable Radicals*, p.1-10
[807] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.188
[808] Howell, *Respectable Radicals*, p.77-78

Western, and I attribute it to hearty and unanimous loyalty which exists not only between the heads of department but on the whole staff throughout the service.'[809] Indicative of this paternalistic attitude was also the lack of union membership within the LSWR, as presumably the majority of its employees felt they had no need to join such organisations. Furthermore, a letter to the *Telegraph* in 1911 stated that senior officials' highly paternalistic and respectful attitude towards the staff was the root cause of LSWR employees not joining the national strike of that year. The writer, a company employee, noted that *'*we have our troubles, and, like the average Englishman, we sometimes grumble, but a general strike would be regarded as little less than treason.'[810]

Giles argued this culture of paternalism, which also provided employees with a non-contributory pension scheme, education facilities, an orphanage, a savings bank and ambulance classes, was a calculated move by senior company officials to reduce employee militancy. In her opinion from some point in the 1870s and 1880s LSWR directors and managers began 'to realise the need to appear benevolent' and such a strategy was not from "compromise and cooperation" nor "negotiations and accommodations"' but one of careful 'forward planning' by an astute management.[811] Yet, Giles overplays the extent to which the LSWR's management planned in detail the culture of paternalism. By the 1890s many of the culture's elements had been built up gradually over the previous forty years under three different General Managers and nearly forty directors. Evidence presented in Chapter 4 suggests the culture became firmly established during Scott's General Managership, a man who himself lacked an ability to think strategically, and later officials who joined the company were seemingly subsumed into it given its strong presence within the organisation. Hodgkins suggested the MSLR did not alienate its employees, yet he does not report that it possessed the sort benevolent culture the LSWR did.[812] Nevertheless, Scotter, who had been employed by the MSLR before coming to the LSWR, accepted the heightened paternalism within the South-Western and eventually endorsed it wholeheartedly.[813] The evidence strongly suggests therefore that by the 1890s the heightened paternalism within the LSWR was not the result of strategies its managers and directors were employing. Rather, it was firmly established within the company and most, if not all directors and staff subscribed to it.

[809] *South Western Gazette*, April 1901, p.9
[810] *South Western Gazette*, June 1882, p.2
[811] Audrey Giles, 'Railway Influence in Kingston upon Thames: Paternalism, "Welfarism" and Nineteenth Century Society, 1838–1912' (Unpublished PhD Thesis. Kingston University, 2008), p.328-333
[812] Hodgkins, *The Second Railway King*, p.485
[813] *South Western Gazette*, December 1911, p.10

Irrespective of its origins, by the late-1890s the presence of this paternalistic culture possibly meant the company's senior managers and directors were more willing to consider changing employees' working conditions when requested to do so. These decisions therefore contributed to raising the LSWR's expenditure in the period. Yet, it also considerably improved the nature of the company's labour relations, at a time when other railways' officials began coming into conflict with their increasingly militant staff over pay and employment conditions.[814]

Section 3 – Operations after 1900

Four main changes affected the LSWR's financial performance after 1900. Firstly, the company's suburban passenger business was attacked by tram competition and its passenger numbers stopped increasing. Secondly, the freight tonnage the company hauled did not increase as rapidly as before 1900. Thirdly, higher material, wage and fuel costs raised the company's OR from 57.49 percent in 1897 to 63.95 percent in 1901. Lastly, in a period when the company was engaging in numerous expensive capital projects, its ability to access finance became more difficult, thus limiting decision-makers' ability to invest in schemes that would possibly have improved the company's profitability. Confronted with this situation, the LSWR's directors and senior managers were tasked with reducing company costs and maintaining profit when the underlying certainties of railway management that they had understood for decades, that traffic would always grow and capital was always available, had disappeared.

The next two sections demonstrate how after 1900 the career paths of the LSWR's senior managers – who in this period had considerable control of the railway's operational policies – were important in determining their responses to the company's depressed profitability. Only one highly innovative senior manager worked for the LSWR after 1898, the Superintendent of the Line between 1899 and 1902, Sam Fay. As Chapter 3 discussed, between 1892 and 1899 Fay had been the MSWJR's General Manager. He therefore possessed a broader range of management experiences than his contemporaries, was not dedicated to the LSWR's existing operational practices, and had developed a considerable capacity to think creatively. Thus, during his tenure he brought to the Traffic Department many innovations and advanced ideas about railway management, and began transforming it into one of the most enterprising lines in the country.

[814] Howell, *Respectable Radicals*, p.77-78

Nevertheless, on leaving to become the GCR's General Manager in 1902[815] many of the managerial and technological innovations Fay had pursued were not continued. Between 1902 and 1911 the company's operational policies were controlled by Owens, the General Manager, and Holmes, Fay's successor. Nether had worked outside the LSWR and had been brought through the Traffic Department's introvert clerical promotional structures from a young age (see Chapter 3).[816] Consequently, because of their narrow employment experiences, and had only learnt about railway management from within the company, they had limited capacity to innovate or critically reassess how it was run, and many of their attempts to improve its management and find efficiencies were simply adaptations of established operational practices.

Additionally, Owens and Holmes' unadventurous and conventional approach to railway management was strengthened by the board's constitution. Chapter 3 discussed how in the 1900s most directors had considerable external business interests and, thus, were unable to dedicate much of their time to the railway. This left oversight of the company's operational functions to two directors who had joined the board in the 1870s, Campbell and Govett, and two ex-LSWR employees who had served the railway for decades, Macaulay and Scotter. Only one 'activist' director joined the company after 1900, Drummond, but he lacked external business interests and presumably learnt about railway management from within the LSWR.[817] Consequently, given that four of these five active directors had had influence within the company since the 1880s, had since that time not worked outside it, and that all of them had few external business interests, it can be suggested that their views on railway management had stagnated by the 1900s. They therefore held similar views on railway management to Owens and Holmes, as will be demonstrated, while their ability to critically assess senior managers' actions was limited.

In sum, the traditional outlook on railway management held by the LSWR's senior traffic managers, which were bolstered by similar views held by active directors, meant that after 1902 the company never found the considerable efficiencies Owens' successor from 1912, Herbert Ashcombe Walker, showed were possible. Thus, the company's financial performance did not improve in the 1900s. Therefore, by contrasting Fay's exemplary management of the company's traffic matters (and through highlighting some of his initiatives as GCR General Manager), with Owens and Holmes' conservative management, this Chapter develops one the thesis' central

[815] *Great Central Railway Journal*, July 1905, p.3
[816] Owens had joined the company as an apprentice clerk at the age of sixteen in the Goods Audit Office (TNA, RAIL 411/492, Clerical staff character book No. 2, p543), while Holmes had started as a Junior Clerk at Lapford Station at the age of fourteen (TNA, RAIL 411/492, Clerical staff character book No. 3, p215).
[817] *South Western Gazette*, September 1900, p.9

arguments: that because there was a dearth of development of, or innovation in managerial practice from within the LSWR between 1870 and 1911, the company's operating techniques only advanced when new senior managers were appointed who had worked outside the company.

6.6. The supply of capital

The LSWR's inability to improve its financial performance after 1900 cannot be solely attributed to senior managers' traditional outlooks on railway management. At a time when the company was still undertaking major capital projects, described in Section 1, its ability to raise capital diminished. Decision-makers therefore had limited finance to invest in projects that may have improved profitability. After 1900 investors lost confidence in British railway securities. Irving argued this was because they were investing overseas.[818] However, contemporary reports suggest the change was triggered by railway companies' decreasing profitability.[819] Either way, confidence in the LSWR's shares declined after 1900 and its share price fell from 195.5 pence in 1900 to 141.5 pence in 1911.[820]

Steadily falling share prices both reflected and had an impact on the LSWR's weakening ability to raise capital. Consequently, the directors attempted to curtail capital expenditure after 1900.[821] In 1901 the Engineering Committee ordered the Resident Engineer, Jacomb-Hood, to analyse expenditure on the company's on-going projects. His report categorised the projects into three categories according to how he recommended they be proceeded with, as follows:-

1. List A: works to be carried to completion.
   (£652,195 capital [account], £6,608 revenue [account])
2. List B: works to proceed and finished at convenience.
   (£298,500 capital, £748 revenue)
3. List C: works to stop until further notice.
   (£168,717 capital, £675 revenue)[822]

[818] Irving, R.J., 'British Railway Investment and Innovation, 1900-1914', p.39
[819] *Hull Daily Mail*, Friday 26 July 1901; *Lincolnshire Chronicle*, Friday 11 May 1900; *Manchester Courier and Lancashire General Advertiser*, Wednesday 01 January 1902; unknown author, 'English Railway Prospects', *The Saturday Review*, (4 August 1900), p.139-140
[820] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.216
[821] *Railway Magazine,* June 1911, p.452
[822] TNA, RAIL 411/28, Court of Directors Minute Book, 10 October 1901, p.129

The board endorsed his report, mirroring the NER and LNWR's slowing and cancelling of projects in the same period.[823] Yet, the majority of the works Jacomb-Hood analysed were continued with as planned, with only 15.07 percent of proposed capital expenditure being postponed until further notice. This suggests that in 1901 LSWR directors retained some confidence that capital supplies would be restored. Yet, by 1904 the capital situation had worsened and further action was taken to curtail expenditure. In February the Finance Committee requested that 'In consequence of the increasing difficulty of raising capital at the present time not only by this company but all other railway companies …[that] capital expenditure for the current year…[be] kept down to the lowest possible limit.' Owens thereafter was ordered to write a report on the LSWR's capital expenditure[824] which recommended that it not exceed £200,000 in that half year unless an emergency arose.[825]

Curtailing expenditure was not the only means by which the LSWR attempted to deal with the problem of its decreased access to capital after 1900. As Chapter 3 discussed, directors with interests banking and finance joined the board in 1901, 1904, 1907 and 1910. These interlocking directorships may have been intended to allow the company to access capital on favourable terms, as well as acquire better information regarding financial markets. Unfortunately, there is no direct evidence to show they did.

Overall, the LSWR's inability to access capital easily after 1900 therefore negatively impacted on its financial performance. It slowed the progress of the company's major on-going infrastructure projects, which could have possibly have improved its operating efficiency (see Section 1), while decision-makers' ability to invest in schemes that may have improved its profitability and performance was, to some extent, limited, especially before 1905.

6.7. Competition from trams

One of the major challenges LSWR decision-makers faced after 1900 was the expansion of electric trams systems in its suburban district. These progressively attracted passengers away from the railway, diminishing its revenue. The tram company that most challenged the LSWR's suburban business was the London United Tramways (LUT). By 1899 it had obtained permission to build lines from Chiswick to Brentford and Hounslow; Acton to Ealing, and from Southall to Uxbridge. In that year it also placed before the Light Railway Commissioners further schemes for

[823] Irving, 'British Railway Investment and Innovation, 1900-1914' p.63
[824] TNA, RAIL 411/31, Court of Directors Minute Book, 25 February 1904, p.19
[825] TNA, RAIL 411/221, Special Committee on Capital Expenditure, 15 March 1904, p.390

lines from Hounslow to Hounslow Heath; from Brentford to Richmond and Twickenham, and from Twickenham to Hampton, Hampton Court, Hampton Wick, Richmond Bridge and Teddington.[826] If built, this second tranche of lines would directly compete with the LSWR's suburban services, and at the light railway commissioners meeting in June 1899 Fay stated the railway would lose between 1.5 and two million passengers yearly to them. The LUT did not secure assent to build the lines and was ordered to take their plans before parliament. However, the company's bill authorising them passed in August 1900[827] and the lines were opened between 1901 and 1903. By 1906 the LUT had further connected to Kingston, Surbiton, New Malden and Wimbledon where it was also in competition with the LSWR.[828] In addition to the LUT, in 1904 the London Country Council Tramways adopted plans to electrify its numerous horse tramways;[829] further challenging the LSWR's business in inner suburban areas around Vauxhall, Clapham Junction, Wandsworth and Putney.[830]

Being clean, modern and more convenient than railways, electric trams were instantly successful, as predicted. In 1902 at the hearing of an LUT bill the LSWR's solicitor stated that tram competition was depressing the railway's revenue by £10,000 per annum and gross receipts on the Kew Bridge to Hounslow route had fallen from £1,516 to £524 in six months. [831] Later in the decade this competition had not abated and in August 1908 Scotter stated the LSWR had lost £11,000 from tram competition in the previous six months.[832] Only increased income from the LSWR's long-distance services, the speed and comfort of which were significantly improved after 1900, offset the loss of trade on the company's suburban routes.[833]

Electrification Possibilities

Electric traction was considered, especially on suburban lines, to be superior to steam in numerous ways. It was more reliable, incurred lower operating costs and, most importantly to the LSWR, provided a more comfortable travelling experience for passengers. Indeed, it was this

[826] Geoffrey Wilson, *London United Tramways: A History 1894-1933*, (London, 1971), p.35-45
[827] Wilson, *London United Tramways*, p.45
[828] Colin Chivers, *The Riverside Electric: LSWR Electrification 1912-1922 – South Western Circle Monograph No. 5*, (Unknown, 2010), p.2-8
[829] London Metropolitan archive [LMA], LCC/TWYS/GEN/01/009, Report of the Highways Committee, 10 November 1904
[830] Chivers, *The Riverside Electric*, p.10
[831] Wilson, *London United Tramways*, p.83
[832] *Derby Daily Telegraph*, 6 August 1908
[833] *Railway Magazine*, June 1911, p.456

attribute that tempted passengers away from the trams when the LSWR eventually electrified its suburban lines between 1913 and 1916.[834]

The possible electrification of the LSWR's suburban network started developing its senior officials' minds in the late-1890s as Scotter particularly supported the technology. He had initiated the company's investment in and consequent working of the electrically powered Waterloo and City Railway (WCR) in 1891,[835] and this had introduced LSWR officials to electric traction. For example, the company's consulting engineer, Galbraith, supervised the line's construction; the work was undertaken by Perry & Co, one of the company's contractors, and the LSWR's Signalling Superintendent, Annett, designed the signals. [836] Furthermore, between 1895 and its absorption by the LSWR in 1907[837] four 'activist' South-Western directors held positions on the WCR's board. Their extensive experience of the advantages of electric traction probably helped develop amongst them the idea that parts of the company's suburban network could be electrified.[838] This thinking was bolstered in the late 1890s by Scotter's belief that electric traction had the potential to be railways' future form of motive power. In 1898 he stated that he was 'within a measurable period of electric traction' and that it could theoretically replace steam.[839] Two years later he proclaimed that an unspecified invention in Austria would 'revolutionise electric traction in this country.'[840] Scotter was further exposed to electric tractions' portential in 1899 when he joined the board of the Great Northern and City Railway[841] (he later became chairman[842]). This was electrically powered and built to main line standards, demonstrating how electrification could be applied to trains larger than those on sub-surface tube lines.[843] Consequently, by 1902 the idea of electrifying the company's network had become fully formed in officials' minds; especially within the Engineering Department. For example, in that year Jacomb-Hood and the Waterloo Telegraph Office chief clerk (later Signal and Telegraph Superintendent[844]), Thorrowgood, gave papers to the company's Main Line and Metropolitan

[834] Chivers, *The Riverside Electric*, p.2
[835] TNA, RAIL 411/8, Court of Directors Minute Book, Minute No.981, 9 October 1891
[836] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.25-28
[837] TNA, RAIL 1110/284, London and South Western Reports and Accounts, Half-Yearly report, year ending 30 June 1907, p.4
[838] Unknown Author, *Directory of Directors*, (1895-1907), various pages
[839] *Huddersfield Chronicle*, Saturday 1 January 1898, p.7
[840] *Hull Daily Mail*, Thursday 7 February 1901, p.2
[841] Unknown Author, *Directory of Directors*, 1899
[842] *Manchester Evening News*, Monday 2 February 1903, p.6
[843] White, H.P., *A Regional History of the Railways of Great Britain*, (London, 1963), p.103-104
[844] TNA, RAIL 411/493, Clerical staff character book No. 3, 1839-1920, p.158,

District Debating Society on 'Electric Traction.'[845] Jacomb-Hood's paper even suggested electrifying the suburban routes that were eventually converted from 1913 onwards.[846]

Electric Delay

Therefore, even before the LUT trams were taking substantial portions of the LSWR's passenger traffic, electrification was considered a plausible mode of traction for the company's suburban services. Yet, despite enthusiasm within the LSWR for electrification before 1905, plans to convert its lines were only initiated in 1912.[847] This delay was caused by numerous factors.

Firstly, electrifying the LSWR's suburban lines was expected to very costly. [848] With the company heavily committed to its other capital projects before 1905, and with its ability to access capital limited, it is unlikely that it could have funded a suburban electrification project easily. Indeed, in August 1902 Campbell stated that electrification would not occur until the main line widenings were completed and the reconstruction of Waterloo Station was well advanced.[849]

Additionally, given that electrification of the LSWR's suburban lines would make it one of the largest such networks in the world, there was considerable uncertainty as to the form of electric traction the company would use. Railways in Britain and abroad were adopting different systems; for example the LBSCR had an overhead electrical system,[850] while the MDR's trains were powered from a third rail.[851] Chivers argued that delaying the implementation of electrification allowed the LSWR time to gauge the effectiveness and efficiency of the different systems of traction.[852] Indeed, Scotter stated in February 1905 that while the board was watching electrification elsewhere, only 'at the proper time' would the LSWR see whether the technology's adoption on its suburban routes was possible.[853] In this respect the LSWR was not unique; Irving

[845] *South Western Gazette*, July 1902, p.11 and South Western Gazette, April 1902, p.6
[846] London School of Economics (LSE), HE1/106, Electric traction in its relation to existing railways : a paper read before the London and South Western Railway Debating Society, May 1902, p.14-15
[847] Chivers, *The Riverside Electric*, p.15
[848] LSE, HE1/106, Electric traction in its relation to existing railways : a paper read before the London and South Western Railway Debating Society, May 1902, p.14-15
[849] TNA, RAIL 1110/284, London and South Western Reports and Accounts, Annual General Meeting, 6 February 1902, p.2
[850] *Railway Magazine*, June 1912, p.514
[851] Chivers, *The Riverside Electric*, p.8-9
[852] Chivers, *The Riverside Electric*, p.14
[853] TNA, RAIL 1110/284, London and South Western Reports and Accounts, Annual General Meeting, 9 February 1905, p.2

has argued that NER decision-makers were also uncertain as to what form of electric traction to use on their electrification schemes around this time.[854]

Despite the LSWR decision-makers' considerable experience with electric traction after 1905, it can be suggested that their delay in electrifying the company's suburban network can largely be attributed to their conventional outlooks on railway policy and strategy. By the second half of the decade there was far more clarity about which forms of electric traction were efficient and reliable, and many electrified services, such as the MDR's, were by that point demonstrably successful. Yet, within the LSWR, interest in the progress of electric traction seemingly waned after 1905. This diminished interest might be attributed to the fact that Scotter, who was largely responsible for the LSWR's early enthusiasm for electric traction, was committing less time to the company's affairs between 1906 and 1910 because he was serving on the vice-regal commission on Irish Railways. [855]

Most importantly, the demands on the LSWR's capital account eased considerably after 1905. By this year the majority of the company's main line widenings and infrastructure improvements had been completed. Indicative of this fact, in 1906 the LSWR had no trouble raising the capital to purchase the WCR for £627,340.[856] This amount was, coincidentally, almost the same as Jacomb-Hood's projected cost of a suburban electrification scheme in 1902[857] (if inflation adjusted his figure of £630,000 is just short of the actual expenditure on the LSWR's suburban electrification between 1913 and 1916 of £1,186,963[858]). It therefore seems unlikely that after 1905 LSWR decision-makers would have been unable to find the capital for a suburban electrification project if they so desired.

Also, the mere fact that the board decided to purchase the WCR, which was making adequate profits, demonstrates the directors' traditional outlook on policy. The decision was taken because, allegedly, they feared that the WCR would lose traffic to increasing cab numbers and inner London tramways, and that the LSWR would, as per the agreement of 1894, have to make up the short-fall in its profits so it could pay the three percent dividend on its ordinary stock (see

[854] Irving, 'British Railway Investment and Innovation, 1900-1914', p.56
[855] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.101
[856] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.101
[857] London School of Economics [LSE], HE1/106, Electric traction in its relation to existing railways : a paper read before the London and South Western Railway Debating Society, May 1902, p.14-15
[858] LSE, HE1/106, Electric traction in its relation to existing railways : a paper read before the London and South Western Railway Debating Society, May 1902, p.14-15

Chapter 5).[859] However, it can be tentatively suggested that had the board possessed a more ambitious approach to policy, the LSWR's capital would have been better spent on electrifying its suburban lines to win back some of the passengers and revenue it had already lost.

The LSWR's delay in electrifying its lines after 1905 can therefore only be attributed to senior decision-makers' possessing a conservative approach to policy. This view is given weight by the contemporary view of Drummond, the company's chairman from 1912. He tied the delay directly to Scotter and Owens' administration, saying that the former's illness towards the end of his chairmanship and the latter's impending retirement had caused electrification not to be initiated.[860] Yet, these issues were only relevant in the years shortly before 1912 and do not explain why nothing was heard from within the LSWR about electrification projects between 1905 and 1911. The LSWR decision-makers' conservative approach to the issue was not unique. Irving has argued that the NER and LNWR possibly delayed and curtailed electrification projects around the same time for similar reasons. Indeed, he argued that contemporaries were 'disturbed' by numerous British companies' reluctance to pursue electrification projects in the face of tram competition. For example, in November 1911 the *Railway Times* commented that 'the most serious lack of development is in the electrification of the busy passenger lines in and near our major cities. In the U.S.A. and in Germany, we see great schemes going forward, yet this country, which should be in the van, lags behind.'[861]

Ultimately, the LSWR's failure to electrify its suburban lines after 1905 caused profitability to wane further. By 1913 the company's loss of a million passenger per year to the trams was costing it £100,000 annually. [862] Only when the LSWR received a new dynamic General Manager, Walker, supported by a new chairman, Drummond, was suburban electrification finally initiated in 1913. It was hugely successful; between January 1915 and June 1920 the number of passengers travelling on the LSWR's suburban lines rose from around two million to nearly five million.[863]

[859] Faulkner, and Williams*, The LSWR in the Twentieth Century*, p.101
[860] TNA, RAIL 1110/284, London and South Western Reports and Accounts, Annual General Meeting, 9 February 1912
[861] Irving, 'British Railway Investment and Innovation, 1900-1914', p.39
[862] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.101
[863] Chivers, *The Riverside Electric*, p.164

6.8. Passenger services

In the absence of an electrification project, responsibility for winning back traffic shifted from the directors to the company's management, with Owens and his Holmes looking for ways to counter the tram threat without significant capital outlay. Firstly, bogie carriages were introduced on suburban routes, replacing six-wheeled carriages. By 1900 some of the LSWR's suburban carriages had been constructed the 1870s, and as such in 1900 and 1901 the Locomotive Committee ordered that similar six-wheeled carriages be built.[864] However, with the challenge from trams increasing, in May 1902 thirty-two bogie carriages four car block-sets were ordered for suburban routes,[865] and by September 1912 145 block-sets had been built.[866] These were more comfortable and the bogies gave travellers a smoother ride than the six-wheel carriages. What passengers thought of these new carriages is unknown; however, they were evidently not drawn back to the railway.[867] Secondly, to reduce operational costs but increase service frequency on short branches Drummond, the Locomotive Superintendent, introduced railmotors which combined a locomotive and carriage in one unit and were cheaper to run than full trains.[868] Initially, two were constructed for the LSWR's joint Fratton and Southsea branch with the LBSCR, on which the companies were in direct competition with trams.[869] Deemed a success, the LSWR then built seventeen up to June 1906 for country branches, with two operating in its suburban territory between Twickenham and Gunnersbury in 1910.[870] Nevertheless, with limited capacity, regular maintenance requirements[871] and their uneconomical nature, the railmotors were ultimately unsuccessful and were all withdrawn in the late 1910s.[872]

Owens also negotiated with the LUT in an effort to mitigate the damage it was doing to the LSWR's business. The LUT's 1904 Parliamentary bill gave it powers to extend its network to Staines; to which the LSWR naturally objected as the line would be another source of competition for its suburban services. However, Owens negotiated an agreement whereby the LSWR would drop its opposition to the bill if for three years the LUT did not promote further routes in the territory where the companies were in competition. Also, within this time-frame the

[864] G.R. Weddell, *LSWR Carriages in the Twentieth Century*, (Oxford, 2001), p.130
[865] TNA, RAIL 411/192, Locomotive Committee Minute Book, Minute 931, 14th May 1902
[866] Weddell, *LSWR Carriages in the Twentieth Century*, p.16
[867] Chivers, *The Riverside Electric*, p.8-9
[868] *The Financial Times*, Tuesday, 31 October 1905,
[869] Weddell, *LSWR Carriages in the Twentieth Century*, p.89
[870] TNA, RAIL 411/415, Personal collection of details of a varying nature covering costs, and information of a general character, 1903-1908, p.89
[871] H.C. Casserley, *London & South Western Locomotives*, (Shepperton, 1971), p.137-138
[872] Weddell, *LSWR Carriages in the Twentieth Century*, p.89

LUT's Staines project was only to proceed with the LSWR's consent.[873] While this agreement did nothing to win back traffic to the railway, it prevented the further development of the LUT's network and additional trade being lost to the trams. The LUT never connected to Staines.[874]

Lastly, the LSWR manipulated passenger fares, particularly season tickets. As third class passengers particularly had deserted the railway for the trams, in 1902 the company started issuing third class season tickets in an effort to win them back. Furthermore, in 1911 Owens was considering widening the area covered by season tickets and reducing their cost, to encourage individuals to live in areas beyond the trams' reach. Indeed, given the increased speed of the LSWR's suburban services, the extra distance was not expected to be problematic for passengers.[875] Ultimately, however, all these measures seemingly did little to reclaim passenger traffic from the trams.[876]

Timetabling

The LSWR's inability to win back passenger traffic from the trams was not wholly due to the ineffectiveness of these measures or the failure to electrify its suburban network. Some of the blame can be placed on Henry Holmes, the LSWR Superintendent of the Line since 1902, who had charge of the company's train timetables.[877] When Walker became the LSWR's General Manager in 1912 he identified the timetable as a significant weakness, stating the whole operating department needed 'tightening up.' While its excursion traffic was well-handled, he was dissatisfied with the timetabling arrangements of regular services, particularly in suburban districts. During Holmes' superintendency the LSWR's train service had seemingly become unappealing; presumably deterring passengers from travelling with the company in its suburban territories where trams were more regular. In an effort to improve suburban passenger services, in 1912 Walker asked Holmes to prepare draft 'headway' or 'clock-face' timetables for the Kingston Loop services, where trains arrived at stations at a set time on the hour and thus eliminated passengers' need to check timetables. After a month Holmes returned and stated that while such arrangements were possible on smaller lines, their institution on the LSWR was impossible. Walker was astonished by this response and consequently transferred timetabling

[873] Chivers, The Riverside Electric, p.8-9
[874] C.S. Smeeton, *The London United Tramways: Vol. 1 - Origins to 1912*, (Walsall, 1994), p.180-189
[875] *Railway Magazine,* June 1911, p.455-456
[876] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.101
[877] TNA, RAIL 411/493, Clerical staff character book No. 3, 1839 – 1920, p.215

planning department from Holmes' remit and into his. Eventually headway timetables were produced four years later.[878]

Personal circumstances may have explained part of Holmes' resistance to headway timetables. There was always a likelihood Holmes would clash with Walker given that the former had expected to become General Manager on Owens' retirement.[879] Nevertheless, in large part his resistance to headway timetables was probably attributable to the same organisational traditionalism that hindered the LSWR's initiation of an electrification project after 1905. This will now be discussed.

6.9. Conservatism in passenger services

Overall, despite the company's profitability coming under pressure from tram competition (as well as other sources) between 1900 and 1911 the effectiveness of the LSWR decision-makers' response to this situation was largely hindered, especially after 1905, by their highly conservative concepts of railway operation. Policies such as improved carriages, negotiating with rivals (the LUT), and fare manipulation had all been tried, in some form, in the company's history, while policies that were radical, such as suburban electrification and the institution of headway timetables were resisted.

It is interesting to note that at the same time Sam Fay was innovating to attract customers to the GCR's services. In response to tramway competition in 1904 he introduced around Liverpool Britain's first weekly zone season ticket for local journeys. Furthermore, in 1902 the GCR was the first British railway to establish, with considerable benefits for the company, a dedicated publicity department.[880] It can therefore be considered that these innovations, which were eminently suited to a passenger railway such as the LSWR, possibly would have been pushed for or introduced by Fay had he not left the company. Yet, it was only in 1913, when Walker was General Manager, that the LSWR established its own Publicity Department.[881]

The contrast between the level of innovation within the LSWR after 1902 and what Fay was doing at the GCR (and what he could have possibly done in the LSWR) is therefore important in demonstrating how the careers of the former company's decision-makers shaped its financial

[878] Klapper, *Herbert Walker's Southern Railway*, p.50-51
[879] Klapper, *Herbert Walker's Southern Railway*, p.40
[880] Dow, *Great Central: Volume 3*, p.32-34
[881] Klapper, *Herbert Walker's Southern Railway*, p.55

performance. Fay was far more of an innovator that Owens, Holmes or the LSWR's Board. Apart from his natural skill as a railway administrator, he had spent a considerable portion of his career between 1892 and 1899 outside the LSWR. This presumably served him well. His thinking on railway management was not constrained by one set of established practices and he had developed a capacity to think creatively.

Contrastingly, it can be suggested that LSWR decision-makers' narrow outlook on policy after 1902 was the result of them having worked within the company for decades, with little contact with business or railway administration outside it. Owens, Holmes and all the senior traffic managers had never worked outside the Traffic Department's rigid, hierarchical and introvert promotional ladders, while the most influential directors (Scotter, Macaulay and Campbell) had joined the company, either as directors or managers, long before 1900, and had few external business interests (see Chapter 3). These individuals therefore had not the experience or knowledge to generate innovative ideas that may have won back traffic from the trams; while most of them were institutionalised within the company's existing operational practices and found it difficult to critically assess their quality.

As such, this section has shown the importance to the LSWR's financial performance after 1900 of the backgrounds and careers of its decision-makers. Fay's range of employment experiences gave him the capacity to think creatively and critique effectively existing operating practices, while because those he left behind within the LSWR had little experience of railway management outside it, their capacity to do these things was severely limited and, as a result, the company's financial performance did not improve after 1902. This argument will be developed in the next section of the chapter.

Section 4 – Reducing operational costs

6.10. Introduction

Crafts, Leunig and Mulatu	**1899-1901**	**1910-12**	***Change***	***% Change***
	0.054	0.025	-0.029	-46.30%
Mitchell, Chambers and Crafts	**1897**	**1910**	**Change**	***% Change***
	4.3	3.4	-0.9	-20.93%

Table 4: LSWR cost inefficiency scores. Cost inefficiency in these studies is defined as the ratio of observed costs to minimum feasible costs. Source: Crafts, Leunig and Mulatu, 'Were British railway companies well managed in the early twentieth century', p.853 and Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.808-09

While the LSWR never effectively countered the competition from trams after 1900, its senior managers did have some success in reducing operational expenditure in response to the fuel and material price increases that contributed to inflating the company's OR from 57.49 percent in 1897 to 63.95 percent in 1901.

After 1900 Scotter's management structure remained in place; the LSWR's departments operating largely independently of each other, coordinated only by the General Manager's strategic goals. Owens tasked all his department heads with reducing departmental costs and, as such, studies have shown that the LSWR's cost inefficiency fell in the period (Table 4). However, the extent to which department heads found cost reductions was predominantly dependent on their knowledge and abilities and, thus, they had varying degrees of success. Indeed, what this section again demonstrates is that senior traffic managers' introverted and insular careers impacted negatively on their ability to innovate or critically assess the worth of established management practices. Consequently, by 1911 the company's operations were not as efficient as they could have been.

6.11. Wagon Loading

British railways between 1870 and 1914 were frequently criticised for their poor wagon loading. Contemporary commentators such as Acworth[882] and Paish[883] argued that larger wagons, better management and use of more sophisticated statistics, such as the ton-mile, would increase train loads and reduce operating costs. These arguments were restated, essentially unchanged, by Aldcroft decades later.[884]

As in the NER's case,[885] the LSWR attempted, on a smaller scale, to improve goods train loads and reduce haulage by building wagons that had capacities greater than the standard of ten tons. In 1899, on either Owens' or Panter's initiative, an experimental twenty-five ton capacity long bogie wagon was constructed.[886] Presumably because its services were not in demand, no more were built. In October 1903 Owens and Malby, the Goods Manager,[887] experimented with wagons that had capacities of fifteen tons,[888] and by 1913 389 were in service.[889] Again, the extra capacity

[882] W.M. Acworth, *The Elements of Railway Economics*, (London, 1905)
[883] George Paish, *The British Railway Position*, (London, 1902)
[884] Aldcroft, *British Railways in Transition*, p.14 and p.21
[885] Irving, *The North Eastern Railway Company*, p.250-251
[886] Weddell, *LSWR Carriages Volume 4,* p.14
[887] TNA, RAIL 411/492, Clerical staff character book No. 2, 1838 – 1919, p.405
[888] TNA, RAIL 411/265, Traffic Committee Minute Book, 7 October 1903, Minute 440,

these wagons provided was seemingly unrequired. In 1913 the LSWR's Carriage and Wagon Superintendent from 1904, Warner, stated that fifteen ton wagons were seldom loaded to full capacity (like ten ton wagons) and were only economical for 'working between certain points where there is constantly a large quantity of medium-weight articles to be conveyed,'[890] for example, on the NER where there was bulk haulage of minerals, particularly coal, over long-distances.[891] After 1903 ten ton wagons continued to dominate the company's stock, with 9,325 still running in 1913.[892]

Nevertheless, like many railways at the time, the LSWR's ability to use larger capacity wagons was possibly restricted by the interrelatedness of its capital: investment in larger wagons would require investment in developing workshops, yards, warehouses and docks to accommodate them, while its customers also would have to augment their facilities at considerable capital expense.[893] Indeed, Scott has argued that the British railway industry's persistence with small coal wagons can be 'explained in terms of path dependence, network externalities, and the installed base of the industry's fixed capital, which made it more costly to rationalise the existing system.'[894] Nevertheless, lack of evidence means it is unclear if technological interrelatedness hindered the LSWR's adoption of larger capacity wagons.

However, LSWR's decision-makers' inability to pursue more vigorously the utilisation of larger capacity wagons may have also been down to their narrow outlook regarding the company's goods operations. Statements from senior officials suggest they believed that wagon sizes were limited given customers' demands for the quick despatch of small loads of goods. In 1903 Judd of the Superintendent of the Line's office, who was involved in rearranging the company's goods trains at the time (see Section 6.14.), stated at the company's Main Line and Metropolitan Debating Society that 'small shopkeepers in the West of England are accustomed to order from the London warehouses and expect to receive those small consignments the day after dispatch…a small wagon, conveying a light load, is the only method of dealing with such

[889] TNA, RAIL 1110/284, London and South Western Reports and Accounts, Report and Statement of Accounts for the year ending 31 December 1914, p.9
[890] Surrey Warner, 'Construction of Carriages and Wagons,' *Modern Railway Working: Volume 5*, (London, 1913), p.191
[891] Irving, *The North Eastern Railway Company*, p.221-221, p. 250-3
[892] TNA, RAIL 1110/284, London and South Western Reports and Accounts, Report and Statement of Accounts for the year ending 31 December 1914, p.9
[893] Irving, *The North Eastern Railway Company*, p.251
[894] Peter Scott, 'The Efficiency of Britain's "Silly Little Bobtailed" Coal Wagons: A Comment on Van Vleck,' *The Journal of Economic History*, 59 (1999), p.1080

traffic.'[895] Thus, it is possible that the LSWR could have found economies through the more fervent investigation of how larger capacity wagons' could be used; although without more evidence this remains conjecture.

Nevertheless, it can be strongly suggested that decision-makers' narrow outlook on policy also impacted on the extent to which they believed they could improve the loading of the wagons the company did own. The LSWR's wagons were usually despatched when they were not fully loaded, something Scotter acknowledged in 1910: the British railways had 'so educated the public up to the advantages of speedy transit, that an express service is now demanded as a matter of course, and wagons cannot therefore be detained fully loaded.'[896] Senior company officials rejected the idea they could utilise more sophisticated management statistics to mitigate this problem. Owens was on the Board of Trade's 1908 committee investigating British railways' accounts and statistical returns. He contributed to the final report, but with two other committee members wrote a dissenting addition. They rejected the idea that ton-mile statistics, which measured the distance each ton of goods travelled, would improve loading, and stated such statistics would never replace the 'continuous supervision and check by subordinate officers over the efficient loading of wagons and trains and over the economical working of our railway.'[897] Also, Scotter stated in 1905 that ton-mileage statistics 'would conceivable be useful where traffic was largely of a similar or like nature, and was also fairly regular throughout the year, but they must be useless if traffic was considerably varied in its nature and irregular in its volume,' as it was in the LSWR's case.[898]

Therefore, between 1900 and 1911 Owens and Scotter believed the company's wagons were being loaded as efficiently as possible given its trading environment. However, they were wrong. Reforms Walker introduced highlighted how improvements in the company's wagon loading went unrealised before 1912, revealing Owens and Scotter's narrow perspectives on policy. From December 1911 the average monthly load per wagon was recorded at Nine Elms Goods Depot; the exercise was repeated at eight other locations from January 1913. This was the first time the

[895] *South Western Gazette*, January 1903, p.4
[896] *The Railway Gazette*, 19 August 1910, p.215
[897] HCPP, Departmental committee on railway account and statistical returns [Cd. 4697] Departmental Committee on Railway Accounts and Statistical Returns. Minutes of evidence taken before the committee appointed by the Board of Trade to make inquiries with reference to the form and scope of the accounts and statistical returns rendered by railway companies under the Railway Regulation Acts with index., http://gateway.proquest.com.ezproxy.york.ac.uk/openurl?url_ver=Z39.88-2004&res_dat=xri:hcpp&rft_dat=xri:hcpp:fulltext:1910-012313 (17 March 2011), 1910, p.26
[898] TNA, RAIL 1110/284, London and South Western Reports and Accounts, Annual General Meeting,3 August 1905, p.1

LSWR collected such data. Outside Nine Elms only slight loading improvements were recorded between January 1913 and July 1914. However, at Nine Elms the average load per wagon rose from 3.268 tons in December 1911 to 3.959 tons in December 1913 (twenty-one percent).[899] Drummond, the chairman, put this improvement down to a newly appointed Outdoor Goods Manager (in addition to the 'indoor' goods manager). He provided the goods operation with better oversight compared with the previous situation where the whole department had been controlled by one Goods Manager, Malby, under whom Walker believed its efficiency had waned.[900] *The Railway Gazette* noted that, consequently, the company's better loaded wagons meant its goods train mileage and operating costs had been reduced.[901]

The rejection by LSWR decision-makers of the idea that wagon loading could be improved, when Walker showed it clearly could have been, reinforces the argument they held conservative outlooks on railway management which limited capacity to innovate. Indicative of this, the Outdoor Goods Manager who improved the Goods Department's wagon loading after 1912 was someone Walker recruited from the LNWR: George Tullidge Hedge. [902] This suggests Walker did not trust established LSWR employees to improve the company's wagon loading given that they were too familiar with its established practices and did not have the experience or knowledge to reform them.

6.12. Judd and goods train movement

Goods train problems

While the LSWR's goods wagon loading did not seemingly improve between 1900 and 1911, better goods train management achieved cost reductions. In late-1902 Judd, a clerk in the Superintendent of the Lines office[903] – who therefore had worked under Sam Fay – spoke at the LSWR's Main Line and Metropolitan Debating Society and identified three areas where more astute goods train and wagon movement could reduce company expenditure.

Judd highlighted that the nature of the LSWR's goods business meant proportionately its haulage of empty wagons was high compared with other railways. The region the company served

[899] TNA, RAIL 411/275, Traffic Officers Conference, 1913-1914
[900] Klapper, *Herbert Walker's Southern Railway*, p.40
[901] *The Railway Gazette*, 14 February 1913, p.205
[902] Klapper, *Herbert Walker's Southern Railway*, p.45
[903] TNA, RAIL 411/494, Clerical staff character book No. 4, 1859-1920, p.49

consumed more goods than it produced and, consequently, the returning of empty wagons, which generated no revenue, raised operating costs and caused difficulties as surplus empty wagons could accumulate at the Nine Elms goods yard and around the network. Conversely, at other times, when the company required wagons for special trains from London, sometimes empty wagons had to be worked up from country locations, again raising expenditure for no immediate return. Given these facts, Judd argued that the distribution and working of empty wagons needed better oversight to reduce unnecessary haulage. Judd also suggested there was scope to increase goods trains' length. The LSWR ran some long trains between Woking and Basingstoke consisting of fifty-four or fifty-five wagons. However, the average length was thirty-seven wagons, and travelling west of Basingstoke the number of wagons attached gradually reduced. Judd argued that just adding five extra wagons to each train would decrease train mileage and reduce haulage costs (although, he did not specify by how much). Furthermore, trains running direct between Aldershot and Southampton via Alton were limited to nineteen wagons over the Meadstead bank, requiring wagons from Winchester and Southampton to travel via Woking. Thus, he also suggested that more powerful goods locomotives might remedy this situation, stating that while some argued high coal prices prohibited these being constructed, in his opinion these claims were overstated and 'opportunities for larger economies have escaped notice.'[904] Indeed, it is possible that he had absorbed Fay's belief – which was stated when visiting America in 1901 – that more powerful locomotives would improve the efficiency of the company's goods train operations.[905]

Lastly, the size of the LSWR's marshalling yards hampered the goods operation's efficiency. Many yards restricted the formation of fast 'through' goods trains, as space was insufficient to quickly shunt out of formed trains wagons that were not destined for their final destination. Similarly, small capacity yards at Willesden, Neasden, Clapham Junction and Brentford had to despatch trains quickly because of the need to create space for the high volume of incoming traffic. Furthermore, at Nine Elms only one train at a time could be broken up and this took approximately forty individual shunting actions. To remedy these problems, Judd proposed that the Neasden yard could be expanded and a new large marshalling yard be built near the four yards cited, with workings between it and them. In his estimation Brentford or, as would become reality in 1910, Feltham would be suitable sites (see Figure 7). He also proposed a new goods

[904] *South Western Gazette*, January 1903, p.4-5
[905] *New York Times*, 9 October 1901, p.3

yard between Wimbledon and Earlsfield stations to ease Nine Elms' burden and allow more through goods trains to be sent quickly.[906]

Solving the problems

Judd's lecture expressed concerns senior traffic managers had regarding the goods train service's efficiency. Thus, by 1911 the three issues he had raised had all started to be addressed. Decision-makers' most pressing concern was the small size of the LSWR's goods yards. In 1906 the Brentford yard was extended[907] and in 1907 the Bevois Park yard near Southampton was also enlarged.[908] Furthermore, when the Locomotive Works moved from Nine Elms in 1909 the vacant space was used to enlarge the company's goods accommodation there.[909] Lastly, in 1910 Owens presented to the Traffic Committee plans for a marshalling yard at Feltham.[910] Despite land being acquired in 1911, construction work was not proceeded with until April 1916. The reason for the delay is unknown,[911] but the yard eventually opened in 1922.[912]

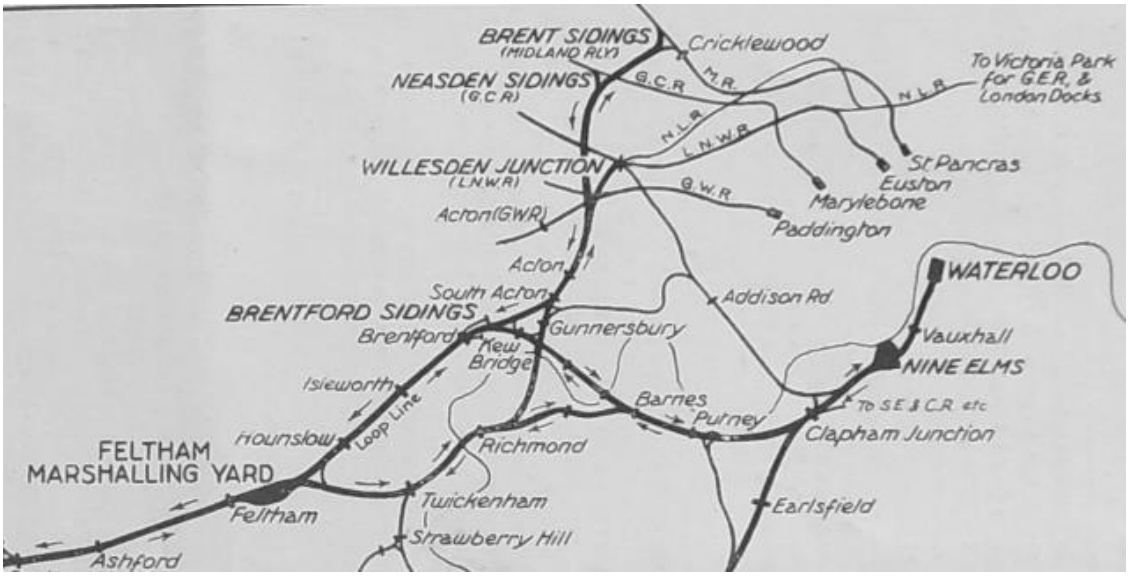

Figure 7: The position of the Feltham Marshalling Yard, Source: *Railway Gazette*, 17 October 1919, p.482

[906] *South Western Gazette*, January 1903, p.4-5
[907] TNA, RAIL 411/267, Traffic Committee Minute Book, Minute 146, 16 May 1906
[908] TNA, RAIL 411/267, Traffic Committee Minute Book, Minute 624, 17 April 1907
[909] Chacksfield, *The Drummond Brothers*, p.95
[910] TNA, RAIL 411/269, Traffic Committee Minute Book, Minute 679, 28 April 1910
[911] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.129
[912] *Railway Gazette*, 12 May 1922, p.1

However, it is important to note that the LSWR's moves to build a marshalling yard took place nearly a decade after Judd's lecture. Clearly Fay, Judd's superior, saw the need for the company to build a marshalling yard near London while he was Superintendent of the Line. In 1901, while visiting America, he expressed his belief that the company's goods train services were 'wasteful.'[913] In 1900 the company considered a site near Byfleet for a marshalling yard, but this was too far from the points of exchange, and then they entered into negotiation for land at Feltham Junction in 1901, the price of which was too high.[914] However, once Fay had left the company, and Holmes and Owens had taken control of traffic policy, there was no further talk of a marshalling yard being built until 1910. It can therefore be suggested that this delay occurred because of Owens and Holmes' conservative outlooks on railway management, described at length above, meant they did not, or could not appreciate how such a yard would improve the company's efficient and economical working. Fay, however, still did; the GCR opened a large marshalling yard at Wath in 1907.[915] Thus, if Fay had not left the LSWR in 1902 the company may have built a marshalling yard sooner than it did.

The movement of wagons around LSWR's network was also more efficiently organised after 1900. Comparative examination of the company's 1892 and 1911 appendices to the working timetable, issued to all staff, shows that by the 1910s wagons' routes and destinations were more closely overseen by company officials. The 1911 appendices possesses far more instructions regarding the 'formation and marshalling of goods trains.' Additionally, it provides greater detail on the routes some wagons should take to specific locations; for example, wagons owned by other railways bound for the Brentford yard, wagons' order in trains bound for Nine Elms, and the return of empty coal wagons via Salisbury. It would also seem that by 1911 the company had introduced a system of stock inspectors acting under the superintendent of the line who controlled closely the movement of all passenger and goods rolling stock. Lastly, the 1911 appendices also instructed employees on how to label wagons correctly, indicating that their routes were more carefully monitored.[916] Most significantly, from 1901 onwards the LSWR affected efficiencies through the rearrangement of its goods trains. In that year Judd[917] and Evans, another Goods Department employee, were both given £20 gratuities by the board for their involvement in the 'revision of goods trains throughout the line.'[918]

[913] *New York Times*, 9 October 1901, p.3
[914] Faulkner and Williams, *The LSWR in the Twentieth Century*, p.129
[915] Dow, *Great Central: Volume 3*, p,95-96
[916] South Western Circle Collection [SWC], 1892 and 1911 Appendices to the Working Timetable, various pages
[917] TNA, RAIL 411/494, Clerical staff character book No. 4, 1859-1920, p.49
[918] TNA, RAIL 411/493, Clerical staff character book No. 3, 1839-1920, p.309

Collectively these measures considerably reduced the LSWR's goods train mileage. Between 1900 and 1911 this dropped from 4,787,119 to 4,429,880; a decrease of 7.46 percent. Furthermore, over the same period the mileage goods trains ran as a proportion of the company's total train mileage decreased from twenty-seven percent to twenty-two percent. The company's tonnage of goods hauled per goods train mile also increased from 1.34 to 1.59 tons (18.38 percent).[919] Presumably, therefore, this improved goods train mileage contributed to lowering company costs through reducing its expenditure on fuel

The LSWR goods trains' lower mileage after 1900 highlights what the last chapter argued: that before then, and despite Scotter's reforms, the company's operations were not as efficient as possible. Evidently, the LSWR's profitability was healthy enough that senior traffic managers were under little pressure to maximise the elimination of cost inefficiencies; and only when the company's cost position worsened after 1900 did they strive harder to find efficiencies within its established operating practices.

6.13. Low-Pressure Pneumatic Signalling

Conservatism amongst the LSWR's decision-makers after Fay's departure can, potentially, be found in other aspects of company policy after 1902. Fay expressed to the *New York Times* in October 1901 his admiration for low-pressure pneumatic signalling systems that many American Railroads used.[920] This was unsurprising; some months earlier the LSWR, on Fay's advice, had finished installing the country's first such systems at Grately Station.[921] This experiment was initially deemed successful, and by late-1902 pneumatic systems were installed on the main line between Woking and Basingstoke.[922] It was expected that these systems would have two principal benefits. Whereas most existing systems were labour-intensive, for example at major junctions where large signal boxes were worked by multiple staff members, pneumatic signals were worked by levers on a panel. They therefore saved space next to the line and the expense of employing so many signalmen.[923]

[919] Board of Trade, *Railway Returns*, 1900 to 1911
[920] *New York Times*, 9 October 1901, p.3
[921] *Railway Magazine*, September 1901, p.275
[922] *Taunton Courier, and Western Advertiser*, Wednesday, 3 September 1902, p.2
[923] Faulkner and Williams*, The LSWR in the Twentieth Century*, p.186

Ultimately, low-pressure pneumatic signals did not spread throughout the British railway industry because the technology was quickly supplanted by the rival electro-pneumatic and all-electric systems. However, apart from installations at Clapham Junction and Staines, pneumatic systems did not spread to anywhere else on the LSWR's network either.[924] Faulkner and Williams argued this was because they were costly to install and maintain.[925] No evidence has been found to verify this. Even if this was true, after 1902 the LSWR's directors and senior traffic managers abandoned completely investigation of how enhanced signalling systems – which many other companies were examining at the time – could improve the efficiency of the company's train services.[926] As with so many aspects of the LSWR's policies after 1900, it can be suggested that this was because after Fay's departure the innovation and far-sightedness he had brought to the company dissipated, and its policies and strategies became dominated by traffic managers and directors whose outlook on railway management was conservative. Only when Walker became General Managership in 1912 did the company again investigate improved and more economical methods of signalling.[927]

6.14. Competition and the GWR

Another area where the LSWR sought economies after 1900 was through the elimination of competition with the GWR. The two companies had been competitors for West Country traffic since the 1840s, through the facilities they afforded to customers, the territories they claimed (see Chapters 4 and 5) and the speed of trains from London.[928] However, from the 1890s the LSWR's expenditure on this contest grew. After 1898 the company began improving its long-distance carriage stock, and in that year introduced some tri-composite carriages, with improved toilet facilities. Indeed, increased numbers of corridor coaches were built through the decade;[929] and steam heating and electric lighting was installed on all new carriages from 1901. Restaurant cars also appeared in this year and these increased in number up to 1907.[930] Furthermore, there was a gradual acceleration of the company's competitive long-distance services. Fay, accelerated services to the West Country. In 1901 Exeter was reached from Waterloo in 210 minutes. However, by using Drummond's new express locomotives this had decreased to 195 minutes by

[924] Alan Williams and Geoffrey Kichenside, *Two Centuries of Railway Signalling,* (2nd edition, Sepperton, 2009), p.109
[925] Faulkner and Williams*, The LSWR in the Twentieth Century*, p.186
[926] Williams and Geoffrey, *Two Centuries of Railway Signalling,* p.100-123
[927] TNA, RAIL 411/377, Agreement with Frank W Prentice as to experimental installation on Hampton Court branch of system of wireless signalling and train control, 1912-1913
[928] Simmons, 'South Western v. Great Western,' p.32
[929] *Railway Magazine*, April 1898, p.316
[930] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.165-166

1903 and to 192 minutes in 1911. *Railway Magazine* stated that the company 'reaped the reward' of such speed, with trains being full.[931]

The precise effect of this competition on the LSWR's profit margins is uncertain; however it evidently was doing some damage. In light of the successful working agreement between the Midland and LNWR[932] in 1908 Scotter began negotiations with the GWR with the aim of the companies becoming 'allies, instead…of rivals' and ending competition.[933] These conversations continued until midway through 1910 when an agreement for ninety years was signed whereby all competitive traffic was pooled and certain facilities for passengers were shared.[934] This effectively ended the West of England competition and in August 1910 Scotter announced that while it would take some years to realise the financial benefits of the agreement, some economies had already been made.[935] With the competition on West Country trains being eliminated, the time taken by the fastest expresses to reach Exeter had increased to 198 minutes by 1912.[936] Furthermore, as a result of the agreement in 1911 the LSWR halted the doubling of its line between Copplestone and Umberleigh, presumably saving it capital expense.[937]

Nevertheless, as the last chapter argued, the competition with the GWR probably did not harm the LSWR profits to the extent that historians such as Cain claimed it did.[938] For example, competitive trains to Exeter constituted only a small proportion of the company's passenger services. Between 1 June and 30 September 1909 there were five 'down' and five 'up' competitive express trains between London and Exeter daily, with four of these services only being run in the summer (competitive services are defined as those classified in the working timetable as 'express'). The LSWR therefore scheduled approximately 2,558 competitive trains between London and Exeter in 1909.[939] Given this route was 171.75 miles in length,[940] these trains would have run about 439,337 train miles overall, only 2.21 percent of the LSWR's total

[931] *Railway Magazine*, June 1911, p.458
[932] Cain, 'Railway Combination and Government, 1900-1914,' p.633
[933] RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922, half-yearly meeting of proprietors, 4 February 1910, p.1
[934] TNA, RAIL 267/370, Proposed absorption of London & South Western Railway by the Great Western Railway: minutes of meetings between Lord Churchill and Sir Charles Scotter, together with memorandum re closer working arrangements, 21 October 1909 and RAIL 411/37, Court of Directors Minute Book, 13 May 1910, p.41a
[935] RAIL 1110/284, London and South Western Reports and Accounts, 1895-1922, half-yearly meeting of proprietors, 5 August 1910, p.1
[936] Faulkner, and Williams, *The LSWR in the Twentieth Century*, p.207
[937] *Exeter and Plymouth Gazette,* Wednesday, 8 March 1911
[938] Cain, 'Railways 1870-1914: The maturity of the private system', pp.117
[939] *London and South Western Railway Working Timetables: 1 June to 30 September 1909*, reprint, (Shepperton, 1969), p.6-52
[940] Author's collection, London and South Western Railway – Gradient Manual 1887

train mileage in 1909.[941] They might have been expensive to operate, but even so, if it is considered these competitive trains were 'full,' as the *Railway Magazine* reported,[942] it is likely they only marginally affected the company's financial performance after 1900.

This tentative conclusion is supported by the fact that, in a period when senior LSWR decision-makers were searching for economies, it was only at the decade's end that they approached the GWR. The competition was possibly not considered an important factor in the company's depressed profitability after 1900. The damage trams were doing to the LSWR's suburban business was likely a far greater worry.

6.15. Locomotive Department affairs

Acting under Owens' general direction, after 1900 Locomotive and Engineering Departments also attempted to reduce their operational expenditure. The majority of the LSWR's increased expenditure after 1897 can be attributed to rising coal prices, which increased from 13.83s in 1898 to 17.44s in 1902 (17.51), or by 26.19 percent (Appendix 6.1).[943] Consequently, combined with other material and wage increases, the Locomotive Department's costs as a proportion of overall company revenue increased in from 12.75 percent in 1897 to 17.14 percent in 1901. This growth in departmental costs also constituted 67.64 percent of the increase in the company's OR over the same period

Dugald Drummond, the LSWR's Locomotive Superintendent from 1895, had almost total responsibility for the Locomotive Department's performance and numerous measures he took improved the quality and efficiency of its management. He gave the Locomotive Department a discipline and professionalization that it had lacked during Adams' administration.[944] He came down particularly on drivers' drinking. Indeed, in some cases they were known to have entered station refreshment rooms for pints of beer when stopped at stations.[945] Furthermore, he strengthened oversight of departmental functions and in 1908 he established a running department inspectorate under Mr Eve the Running Superintendent. This consisted of five districts under inspectors who were responsible for the 'running of the trains,' which presumably included their timekeeping and the efficiency of the train crews. The institution of the

[941] Board of Trade, *Railway Returns* 1909
[942] *Railway Magazine*, June 1911, p.458
[943] TNA, RAIL 411/192 to RAIL 411/196, Locomotive Committee Minute Books 1899-1911, various minutes; Board of Trade, *Railway Returns*, 1901-1911
[944] Ellis, *Twenty Locomotive Men*, p.169
[945] Chacksfield, *The Drummond Brothers: A Scottish Duo*, p.59

inspectorate suggests that oversight of the company's drivers and firemen by the foremen and district foremen, officials who had had charge of it since 1872, was not as effective was as it could have been by the 1900s.[946] Thus, Scotter improved the issue of departmental efficiency by replacing *ad hoc* management structures, some of which had not changed for decades, with more formalised and professional systems.

With Urie's help Drummond also improved the efficiency and quality of the locomotive works' management, like he had done on becoming the Caledonian Railway's Locomotive Superintendent in 1882.[947] In his later years Adams had become vague and relied on Pettigrew to manage the works. However, under Drummond's leadership they had reached full operational capacity by 1896, were ahead of schedule, and labour productivity had increased. General locomotive repairs now took five days and the time it took to construct a locomotive was governed by fixed terms.[948]

Drummond was also of the opinion that educating his staff improved departmental efficiency and reinforced professionalism within the department. In March 1903 he wrote to the Locomotive Committee describing 'the difficulty …[apprentices in the works had] in obtaining the necessary technical education.'[949] Subsequently, he arranged for them to be taught at Battersea Polytechnic for one hour twice a week for three years.[950] In 1909, when the works was transferred to Eastleigh, Urie ran these classes.[951] Drummond also gave drivers and firemen lectures on engine management,[952] with transcripts distributed to all,[953] and encouraged them to attend mutual improvement classes held at Nine Elms, Northam, Exeter and Yeovil, where talks were given on various technical subjects.[954]

Lastly, to encourage to efficient train operation, in 1900 Drummond reformed Adams' premium scheme for drivers and firemen. The amount of fuel locomotives were supposed to use on particular journeys was specified. Therefore, if at the end of the month the train crews had collectively used less fuel than allowed amounts, twenty percent of the value of the coal they had

[946] TNA, RAIL 411/194, Locomotive and Stores Committee Minute Book, Minute 1154, 22 January 1908; *Railway Gazette*, 14 February 1908; *South Western Gazette*, 1 February 1908, p.13
[947] David Ross, *The Caledonian Railway: Scotland's Imperial Railway – A History*, (Catrine, 2013), p.121
[948] Bradley, *The Drummond Greyhounds of the LSWR*, p.8
[949] TNA, RAIL 411/192, Locomotive Committee Minute Book, Minute 1152, 18 March 1903
[950] TNA, RAIL 411/194, Locomotive Committee Minute Book, Minute 9, 5 August 1903
[951] TNA, RAIL 411/196, Locomotive Committee Minute Book, Minute 584, 12 May 1910
[952] Author's Collection, Lectures Delivered to the Enginemen and Firemen of the London and South Western Railway Company on the Management of their Engines by D. Drummond, M.I.C.E, (London, 1908)
[953] Chacksfield, *The Drummond Brothers*, p.59
[954] *South Western Gazette*, July 1896, p.4

saved was divided up between them in proportion to their scale of pay.[955] Overall, Scotter tightened up many aspects of the Locomotive Department's operations after 1895.

Drummond's nineteenth-century management

Despite these measures, because Scotter had given Drummond, who tended to the independent, closed minded, authoritarian and obstinate, a position of unquestionable authority within the Locomotive Department,[956] he failed to improve its overall efficiency after 1900. Thus, the case of Drummond's Locomotive Superintendency supports a main argument of this thesis; because departments were functionally separated within the LSWR's structure, the company's management quality was to a large extent dependent how effectively department heads' actions were coordinated and overseen by those above them in the hierarchy: the directors and General Manager.

Firstly, Drummond put his own needs before overall company efficiency. In 1899 he convinced the Locomotive Committee to allow him to build a small inspection locomotive. Nicknamed the 'Bug', this ferried him around the LSWR's network as he wished, meaning the Traffic Department had to arrange trains around its movement. This disrupted their timetables and possibly decreased departmental efficiency.[957]

The main weakness of Drummond management after 1900 was that he continued to administer the Locomotive Department in a nineteenth-century style, and while systemising its practices he did not modernise them, possibly harming corporate efficiency. His nineteenth-century attitude to management was reflected by the fact that while he tightened up discipline in the Locomotive Department, he was overly interested in locomotive crews' actions. He was the one who lectured drivers and firemen on efficient locomotive operation and wrote them a manual on driving. [958] Furthermore, the Bug would arrive next to trains waiting at signals. If excess steam was detected, causing coal wastage, Drummond would chastise the driver across the gap and order him to report to his office the next morning. Drummond was also known to appear at stations, board locomotives' footplates, and instruct drivers on how to drive their trains.[959] Ultimately, he

[955] TNA, RAIL 411/192, Locomotive Committee Minute Book, Minute 377, 6 June 1900
[956] *The Railway Engineer*, December 1912
[957] Chacksfield, *The Drummond Brothers*, p.117
[958] Author's Collection, Dugald Drummond Lectures Delivered to the Enginemen and Firemen of the London and South Western Railway Company on the Management of their Engines by D. Drummond, M.I.C.E, (London, 1908)
[959] Chacksfield, *The Drummond Brothers*, p.74

addressed all drivers' transgressions of the rules personally.[960] Therefore, while he had a Running Superintendent who was officially responsible for ensuring locomotive crews' efficiency,[961] Drummond was getting directly involved in overseeing this in a manner that was more suited to Locomotive Superintendent of a smaller mid-nineteenth century railway. But also, it is known Drummond rejected modern managerial methods that were introduced to other companies from America which were, presumably, more systematic and efficient (although Chacksfield did not specify anything about them).[962] Therefore, while evidence is limited, it can be suggested that the outdated administrative methods Drummond persisted with using after 1900 possibly raised departmental expenditure, while potential productivity gains were neglected.

Drummond's outdated approach to departmental management can be attributed to the length of his career. He had first become a locomotive superintendent at the North British Railway (NBR) in 1875, after which held the same post at the Caledonian Railway from 1882 until 1890.[963] He had therefore learnt all he knew about locomotive department management in the late-Victorian period. Consequently, when faced with LSWR's changed business environment after 1900, he was unwilling or unable to modernise the Locomotive Department's administration given his familiarity with established working practices.

This may not have mattered much, except that Drummond also had a nineteenth-century approach to locomotive design that hampered the LSWR's construction of efficient, larger locomotives in the 1900s. Evidently, he only possessed the ability and knowledge to build locomotives suitable for the railways of the 1890s. While his smaller 4-4-0 locomotives were a success, Bradley argued that his early 4-6-0s, built in the 1900s to cope with the LSWR's increasing carriage weights and growing long-distance traffic, 'failed to meet expectation. Only those 4-6-0s built later performed adequately, yet they seldom exceeded [the quality or efficiency of] his 4-4-0s.'[964] Drummond also dismissed innovative concepts of locomotive design towards the decade's end. For example, he rejected the notion of boiler superheating which was being tried elsewhere at the time, was advocated by Urie, and which would have improved locomotives' thermal efficiency, theoretically reducing their coal usage.[965] Drummond's conservative approach to locomotive design was reinforced by his refusal to hear criticisms or suggestions for improvements. When his chief draftsman, J.A. Hunter, suggested alterations to

[960] Chacksfield, *The Drummond Brothers*, p.104
[961] TNA, RAIL 411/495, Clerical staff character book No. 5, p.200
[962] Chacksfield, *The Drummond Brothers*, p.101
[963] Bradley, *LSWR Locomotives: The Drummond Classes*, p.3
[964] Bradley, *LSWR Locomotives: The Drummond Classes*, p.3
[965] Chacksfield, *The Drummond Brothers*, p.101

the poorly performing 4-6-0s they were rejected immediately as Drummond let no one interfere with his designs.[966] Likewise, when a driver suggested modifications to his 4-4-0 locomotives to improve ease of maintenance, Drummond rose from his chair and motioned that the driver sit in it. When the driver refused Drummond's reply was 'And why dinna ye like? Because ye know it's my bloody job to build engines and yours to drive them.'[967] Overall, Drummond's abilities, temperament and opinions meant that by his death in 1912 the LSWR's locomotive stock, while possessing a large number of good locomotives, was not as advanced, modern or efficient as it could have been.

Locomotive expenditure

	1901	1906	Change +/-	Percentage change
Cost of Locomotive Department per train mile (d)	**11.53**	**10.15**	**-1.38**	**11.97%**
Locomotive Department's expenditure on fuel per train mile (d)	5.16	3.93	-1.23	-23.84%
Cost of coal per ton (s)	19.73	15.41	-4.32	-21.90%
Changes in the cost of Locomotive Department fuel costs per train mile NOT attributable to changes in fuel prices			0.12d	8.86%

Table 5: Cost of Locomotive Department expenditure attributable to lowering fuel costs in 1901 and 1906. Source: TNA, RAIL 111/284, LSWR reports and accounts, 1901 and 1906

Overall, during Drummond's tenure the Locomotive Department's financial performance remained relatively static as factors that reduced departmental expenditure were balanced by those that raised it. Between 1901 and 1906 the Locomotive Department's expenditure per train mile fell from 11.53d (11.24d) to 10.15d (9.77d), or by 1.76d. However, approximately 1.64d of this reduction can be attributed to falling fuel prices, as Table 5 shows, and only 0.12d of it can be credited to other sources, which included operational efficiencies. Thus, while Drummond was trying to make efficiencies in this period, they were clearly having little or no effect on departmental performance.

After 1906 departmental expenditure per train mile rose from 10.15d (9.77d) in 1906 to 11.39d (10.29d) in 1911; or by 12.22 percent. Some of this increase can be attributed to rising wage costs (Table 6).[968] There was also possibly an increase in the department's expenditure on

[966] Chacksfield, *The Drummond Brothers*, p.101
[967] Ross, '*The Willing Servant*', p.217
[968] TNA, RAIL 111/284, LSWR reports and accounts, 1901 and 1906

materials over this period. Appendix 6.1 shoes that the price the Engineering Department paid for track chairs and fishplates increased between 1906 and 1910, suggesting that over this period the price the Locomotive Department paid for the metal it was using in the construction and maintenance of locomotives also rose.

	1906	1911	Change +/-	% change	Percentage of overall increase in departmental cost
Locomotive Department expenditure per train mile (d)	**10.15**	**11.39**	**1.24**	**12.22%**	
Wages cost in the Locomotive Department (d)	4.63	4.97	0.34	57.63%	27.42%
Materials costs in the Locomotive Department (d)	0.96	1.23	0.27	21.95%	21.77%
Locomotive Department's expenditure on fuel per train mile (d)	3.93	4.52	0.59	15.01%	47.58%
Cost of coal per ton (s)	15.41	15.7	0.29	1.88%	
Changes in the cost of Locomotive Department fuel costs per train mile NOT attributable to changes in fuel prices			0.52d	87.48%	41.94%

Table 6: Locomotive Department Costs in 1906 and 1911. Source: TNA, RAIL 111/284, LSWR reports and accounts, 1906 and 1911

Between 1906 and 1911 the LSWR's expenditure on fuel also rose considerably and to a greater extent than fuel prices increased (Table 6). This was because Drummond's new larger locomotives used more fuel per train mile than his previous designs.[969] In 1900 LSWR locomotives used on average 47.3 lbs. of coal per train mile; yet, presumably because of better locomotive management, by 1905 this had fallen to 45.81 lbs. Nevertheless, the introduction of Drummond's larger engines increased the average fuel LSWR locomotives used per train mile to 55.09 lbs. in 1910, reducing only to 52.09 lbs. in 1911.[970] These locomotives were, of course, considered poor performers, even at the time, and so it is quite possible that different designs or the use of superheating might have reduced fuel usage. For example, Urie's later, but even larger, H15 class

[969] Bradley, *LSWR Locomotives: The Drummond Classes*, p.3
[970] TNA, RAIL 411/192 to RAIL 411/196, Locomotive Committee Minute Books 1899-1911, various minutes

locomotives, which were superheated, managed an average fuel usage in October 1915 of only 48.39lbs per train mile – considerably less than Drummond's locomotives.[971]

Overall, after 1900 the Locomotive Department's expenditure changed little. Between 1901 and 1911 its costs as a proportion of company revenue only fell from 17.14 percent to 16.48 percent, while expenditure per train mile only decreased from 11.53d (11.24d) to 11.39d (10.29d), a reduction of 1.12 percent.

Conclusion

Drummond's persistent use of obsolete management techniques and his rejection of both technological and managerial innovations meant that he contributed little to improving the LSWR's financial performance after 1901. It is likely he was able to run the Locomotive Department's affairs in this inefficient and unproductive manner because he had few constraints on his autonomy. In 1895 he had been given a 'free hand' by Scotter. It can therefore be suggested that with Scotter still on the board after 1898, that Drummond's actions went unchallenged by the directorate. Furthermore, Drummond seemingly had considerable freedom from Owens' oversight or control. This is, firstly, evidenced by the 'Bug', but also one incident that occurred early in Walker's General Managership. In early-1912, because of a coal workers strike, Walker ordered some American coal to keep the company supplied. Drummond, who was presumably used to controlling such matters, was not consulted and in anger emptied a bucket of it on Walker's office floor.[972]

Consequently, after 1900, and despite the company's senior managers being under pressure to reduce their departments' expenditure, with few constraints on his freedom to run the Locomotive Department as he so wished, Drummond had considerable scope to neglect or reject means by which the it could become more efficient or productive, and act in ways that damaged the company's overall cost position. Drummond's case therefore supports this thesis' two main arguments. Firstly, where between 1870 and 1911 LSWR senior managers occupied positions of unassailable authority for decades, over time their thinking on management practice (and in Drummond's case locomotive design) could stagnate or become conservative in nature, meaning established practices potentially became obsolete and inefficient. Secondly, that the company's

[971] D.L. Bradley, *LSWR Locomotives: The Urie Classes*, (Didcot, 1987), p.14
[972] J.C., Urie, 'Tips for Aspiring CMEs', *South Western Circular*, 10 (January 1997), p.221

management quality was considerably reliant on the General Manager or directors' ability to oversee and gain authority over department heads' activities, and get them working together.

6.16. Engineering concerns

Broadly similar issues were to be found in the engineering functions of the LSWR, but the outcomes were different. Between 1895 and 1900 the Engineering Department's expenditure considerably increased because of raised material costs (see Appendix 1), heavier train loads and greater traffic densities.[973] Consequently, between 1895 and 1900 the department's maintenance costs per track mile increased from £52.65 to £59.04 (57.31), an increase of 12.13 percent; while its renewal costs per line mile rose from £987.50 to £1,666.50 (1,617.84), or by 67.76 percent. Consequently, after 1900 maintenance procedures in the Engineering Department were completely reformed to reduce expenditure.

In 1903 the LSWR's new Resident Engineer, John Wykeham Jacomb-Hood, began assessing the Engineering Department's track maintenance procedures. His investigation revealed that the materials used in track maintenance at different points on the company's network bore no relation to the volume to traffic passing over them. He considered this was because prior to that point rising costs had simply been controlled rearranging the staff along the line, and the *SWG* stated that 'little attention had been paid to obtaining the services of a better class of men, or educating up the existing class to a higher standard.'[974] Jacomb-Hood therefore argued his findings 'pointed the way to more methodical means of dealing' with materials usage and departmental expense.[975]

Unlike Drummond, Jacomb-Hood was open to new ideas from outside the LSWR and the British railway industry. In 1901 he had visited America with Fay to investigate railroad management there.[976] Utilising what had learnt, he introduced to the Engineering Department a new track maintenance system. This roughly equalised the workload of every maintenance gang splitting the company's network into sections (four miles for single track, two miles for double). However, the actual length of track each gang maintained depended on the number of points and sidings in their section, and the number of members in a gang reflected these variations. Each track section

[973] *South Western Gazette*, May 1905, p.6
[974] *South Western Gazette*, May 1905, p.6
[975] TNA, RAIL 1057/3422, Circulars, handbills, traffic circulars etc as to excursion and other special workings and facilities on…London & South Western Railway, Jacomb-Hood to Engineering Committee, 25 March 1903
[976] *Evening Telegraph*, Thursday 10 October 1901, p.4

would be regularly assessed by a committee of managers on a points system, with extra marks being added for 'old' (over 20 years old) parts of the network, reflecting the fact that gangs would have to work harder to extend their life, while 'young' sections incurred deductions. This system was used to motivate the workers. After the marks were tallied, challenge cups, silver and bronze prizes and small cash awards were presented to the best inspectors, foreman and gangers.[977] Thus, *Railway Gazette* reported in 1914 that 'the system introduced a new spirit of efficiency amongst all ranks.'[978]

This track maintenance system raised the permanent way's quality and, most importantly, stabilised departmental expenditure.[979] On the debit side, between 1903 and 1910 material prices increased. For instance, the price the LSWR paid for a ton of rails, a ton of chairs, a pair of fishplates and a sleeper rose from £9.65 (£9.29) in 1903 to £10.04 (£9.12) in 1910, or by 4.09 percent. Yet over the same period the expenditure on maintenance per train mile only increased by 0.4 percent, from £55.30 (£53.23) to £55.32 (£50.24); while the cost of renewals per track mile fell from £1,390.5 (£1,338.36) to £1359.92 (£1,235.21), or by 2.20 percent.[980] Thus, the Engineering Department's more efficient working practices allowed it to absorb increased material prices after 1903.

Jacomb-Hood therefore achieved what Drummond never did; he systemised the Engineering Department's work practices while at the same time improving its efficiency. His track maintenance scheme was not simply a refinement of what had gone before it; it completely altered how the Engineering Department's managers supervised the work of those under them. While Drummond incentivised staff to economise through the premium scheme, he generally preferred to pursue economies through stricter supervision and enforcement of the rule book. Conversely, Jacomb-Hood's maintenance scheme replaced the punitive staff discipline of the nineteenth-century with a system which, through the promotion of teamwork as well as the usage of incentives, encouraged the men to work more effectively and use less material. Indeed, Jacomb-Hood devolved some of the responsibility for departmental efficiency to the gangs. Thus, by completely reforming the Engineering Department's established operating practices, Jacomb-Hood was able to vastly improve the department's efficiency.

[977] *South Western Gazette*, May 1905, p.6
[978] *Railway Gazette*, 13 March 1914, p.380
[979] *South Western Gazette*, May 1905, p.6
[980] TNA, RAIL 411/46 to RAIL 411/62, Engineering Committee Minute Books, Various minute, 1892-1910

Furthermore, Jacomb-Hood's innovative track maintenance scheme reveals, once again, how the LSWR's functional department structure may have negatively impacted on its operating performance between 1870 and 1911. There is no evidence that the innovative practices he introduced in the Engineering Department stimulated or influenced in any way similar operational reforms in the Traffic and Locomotive Departments after 1900, where, as shown, practices remained nineteenth century in character. As such, this highlights that because within the LSWR's functional department structure departments were highly isolated operationally (see Chapter 2), innovative practices that may have been developed within one department, and which were beneficial for company performance, were never transferred to or influenced policies in another. This therefore suggests that potential operational efficiencies remained unrealised within the company both before and after 1870.

Section 5 – Conclusion

In late-1901 Sam Fay, before departing for the GCR, stated at a dinner in his honour that 'we should see some great changes in the railway methods of this country.' The British industry had 'hitherto relied too much upon the fact that we had invented railways and the steam engine, and therefore we had little to learn, a fallacy which it would be well for us to note.'[981] Perhaps these comments demonstrate that Fay recognised how many of those in senior positions within the LSWR had perspectives on railway management that were nineteenth-century in character and that, to effectively counter the new challenges the company faced, they would have to reappraise their thinking. This chapter demonstrated they did this with very limited success.

The end of the nineteenth-century LSWR

Before 1900 many of the LSWR's decision-makers held beliefs and concepts about railway management had remained unchanged for decades. Indicative of this, Scotter, who joined the company's board in 1898, initiated between 1897 and 1901 major capital projects that were driven by his goals of improving the efficiency of the company's operations and expanding the concern. The company's main lines were widened, infrastructure at stations and yards was improved, Waterloo Station began to be completely rebuilt, the Southampton Docks were enlarged and the locomotive works were moved to Eastleigh. Some of these schemes were required and some were even successful on a financial basis. Yet, given most of them repeated, on a larger scale, projects the company had undertaken in previous decades, they demonstrate

[981] *South Western Gazette*, 1 January 1902, p.6

how before 1900 senior decision-makers were under little pressure from any source to change or reassess their established responses to the operational issues they faced, for example traffic growth or main line congestion. Indeed, these projects were the final and largest demonstrations of the board's confidence in ideas and beliefs that had underpinned the company's investment policies since, at least, the 1860s: finance was easily available, shareholders were always passive in the decision-making process, and continual traffic growth would make all investments worthwhile in the long or short term.

These capital projects were, however, symptomatic of a broader conservatism that existed amongst the LSWR's directors and senior managers before 1900. The last chapter argued that while Scotter had improved the company's management between 1885 and 1897, the railway Owens inherited in 1898 was 'sub-optimal' as the value of many of its operating practices had not been called into question for some time, perhaps even decades, and thus had developed some inefficiencies. It can be suggested these inefficiencies developed because officials were under minimal pressure critically appraise established management practices as the company's profitability was, given Scotter's reforms, exceedingly healthy, and they were not under any external pressure from, for example, competition, legislation or union activity. The LSWR's case therefore tentatively supports Mitchell, Chambers and Crafts (and others') arguments there was 'weak competition, weak shareholders and weak regulation in a non-traded service sector' acting on industry decision-makers and this gave them plenty of opportunity to neglect potential cost reductions and productivity gains.[982]

Overall, therefore, LSWR decision-makers' actions shortly before 1900 support one of this thesis' central arguments. Given control of policy and strategy was highly centralised within the LSWR, in cases where individuals occupied senior positions over decades with little pressure on them to improve the quality of their management or innovate, their beliefs and ideas on railway administration possibly stagnated. This potentially caused the value of established management methods to be infrequently reassessed and for inefficiencies to develop within the company's operations.

[982] Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig, and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?' p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632

Management after 1900

After 1900 the company's trading circumstances changed. Its profitability was depressed by stagnating traffic levels, competition from trams, and rising material, wage and fuel costs. Consequently, between 1895 and 1901 the company's OR rose from 56.94 percent to 63.95 percent; and its ROCS fell from from 4.96 in 1897 to 4.54 in 1902 (five-year moving average).[983]

This put greater pressure on the LSWR's senior officials to address the waste and inefficiency that existed in the company's operating practices. In some respects they were successful. Drummond enforced economy on the Locomotive Department; goods train mileage fell considerably; competition with the GWR was eliminated and the Engineering Department's expenditure was significantly reduced. Furthermore, aspects of the company's management were modernised and systemised. The Engineering Department changed the nature of labour and materials management by giving employees some agency over working practices, and Drummond introduced systemisation and routine within the locomotive works. These efficiency measures caused the LSWR's cost inefficiency to decline after 1900, as Crafts, Leunig Mulatu, Mitchell, Chambers and Chambers' econometric estimates showed.[984] Furthermore, after 1900 the LSWR also grew its traffic in places; its long-distance passenger numbers increased in the period and the company's investment in the Southampton Docks, which established it as one of Britain's major trading ports, generated considerable revenue.

Nevertheless, the LSWR's financial performance did not improve after 1900: its OR increased from 62.44 to 63.82 percent between 1900 and 1911.[985] To some extent the company's reduced access to capital limited decision-makers' capacity to tackle the company's diminished profitability. Thus, infrastructure improvements that might have benefited its financial position were not initiated; for example a suburban electrification before 1905. Additionally, planned capital projects that would have improved company efficiency, such as the Waterloo Station rebuilding, the widening of the main lines and the movement of the locomotive works to Eastleigh, were also slowed.

[983] Board of Trade, *Railway Returns*, 1895 and 1901 Source: Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.807
[984] Crafts, Leunig and Mulatu, 'Were British railway companies well managed in the early twentieth century', p.853 and Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.808-09
[985] Board of Trade, *Railway Returns*, 1900 and 1911

After 1902 the LSWR's profitability did not improve because, principally, senior officials only enacted limited reform of operating practices, potential efficiencies and productivity gains were not looked for, and managerial and technical innovation within the company diminished following Fay's departure. For example, senior traffic managers felt parts of the business were managed as efficiently as they could be, where Walker's reforms showed they were not: as in the case of suburban timetables and wagon loading. Fay's steps to improve the company's signalling systems and construct a marshalling yard lost momentum after he left the company. Drummond's arrogant and dismissive nature meant he rejected out of hand innovations in engine design and new management techniques; while Owens and Scotter denied accurate statistics would improve wagon loading. Most importantly, after 1905 conservatism amongst senior LSWR officials, particularly Owens and Scotter, unnecessarily delayed the initiation of a suburban electrification project. This allowed the trams' business to increase up to 1916, severely damaging company profitability. Thus, after 1902 there were many areas where the company's management quality and operational efficiency could have been improved, but were not.

This chapter suggested that the backgrounds, careers and experiences of the LSWR's senior officials and directors possibly predetermined that the reform of the company's management practices would only be partial after 1900. Between 1900 and 1911 all traffic managers with decisive influence over the company's policies, such as Owens and Holmes, had developed their careers within the Traffic Department's highly rigid and insular clerical promotional trees. Without much experience of how other railways and businesses were managed, and having learnt about railway management from within the LSWR, it was difficult for them to critically appraise and then reform operational practices they had worked with for decades. Additionally, Drummond's authoritarian leadership style, which was detrimental to company performance, was the result of him having learnt all he knew about locomotive department management in the 1870s and 1880s, combined with his irascible and obstinate personality.

The directors were no better placed. Between 1900 and 1911 all but one director identified as an 'activist' had been with the LSWR since the nineteenth-century as either a board member or senior manager. Scotter still dominated company policy, while Campbell, Macaulay and Govett were still active in its affairs in the first half of the decade. Because these directors had few external business interests and had learnt all they knew about railway management from the nineteenth-century LSWR, they too lacked the knowledge and experience to reform the company along modern lines or critique managers' actions (See Chapter 3).

Overall, therefore, this chapter develops this thesis' main argument. Given those within the LSWR rarely generated or developed new or innovative operating techniques between 1870 and 1911, advancement or improvement in the company's operating practices primarily occurred when new senior managers were appointed who had worked outside the railway, such as Fay. Indeed, it took another manager from outside the company, Walker, to fully drag the LSWR out of the nineteenth-century.

Section 6 – Appendices

6.1. LSWR material costs 1890-1910

	1890	1894	1898	1902	1906	1910	1890-1910 Change
Engineering Department							
COST							
Cost of Rails Per ton (£)		£4.39	£5.00	£5.49	£5.86	£5.73	£1.34
Cost of Chairs per ton (£)		£3.32	£3.45	£3.91	£3.32	£4.03	£0.71
Cost of Fish plates per pair (d)		25.50	26.00	26.00	25.75	27.75	2.25
Cost of Sleepers each (d)		29.50	34.13	44.75	41.00	40.25	10.75
4 YEAR PERCENTAGE INCREASE							
Cost of Rails Per ton			13.90%	9.70%	6.84%	-2.22%	30.52%
Cost of Chairs per ton			3.92%	13.19%	-14.98%	21.39%	21.39%
Cost of Fish plates per pair			1.96%	0.00%	-0.96%	7.77%	8.82%
Cost of Sleepers each			15.68%	31.14%	-8.38%	-1.83%	36.44%
Inflation Rate (adjusted from 1885)	98.33%	99.17%	93.33%	0.00%	99.58%	94.17%	
COST (INFLATION ADJUSTED)							
Cost of Rails Per ton (£)		£4.35	£4.67	£5.49	£5.84	£5.40	£1.04
Cost of Chairs per ton (£)		£3.29	£3.22	£3.91	£3.31	£3.79	£0.50
Cost of Fish plates per pair (d)		25.29	24.27	26.00	25.64	26.13	0.84
Cost of Sleepers each (d)		29.25	31.85	44.75	40.83	37.90	8.65
4 YEAR PERCENTAGE INCREASE (INFLATION ADJUSTED)							
Cost of Rails Per ton			7.20%	17.54%	6.39%	-7.54%	23.94%
Cost of Chairs per ton			-2.20%	21.27%	-15.34%	14.78%	15.27%
Cost of Fish plates per pair			-4.04%	7.14%	-1.37%	1.91%	3.34%
Cost of Sleepers each			8.87%	40.50%	-8.76%	-7.17%	29.56%
Locomotive Department							
ACTUAL							
Cost of fuel per ton (s)	15.53	12.73	13.82	17.44	15.33	15.96	0.43
Cost of fuel per ton (percentage increase)		-18.03%	8.56%	26.19%	-12.10%	4.11%	2.77%
INFLATION ADJUSTED							
Cost of fuel per ton (s)	15.79	13.39	14.23	17.51	15.27	14.96	-0.83
Cost of fuel per ton (percentage increase)		-15.20%	6.27%	23.05%	-12.79%	-2.03%	-5.26%

Chapter 7- Conclusion

7.1. Introduction

This thesis has demonstrated how the LSWR's financial performance between 1870 and 1911 was principally determined by the quality of the decisions made and strategies employed by its directors and managers. This conclusion is important because, as Chapter 1 discussed, over the last fifty years scholars have presented numerous different explanations, some of which are incompatible with each other, for the British railway industry's declining financial performance between 1870 and 1914.

External factors have been blamed. Ashworth considered that growing high-volume, low-margin traffic diminished companies' profitability after 1870,[986] while Irving and Pollins contended that rising material, wage and fuel costs were a factor, particularly in the early-1870s and late-1890s.[987]

Most academics have, however, suggested that the industry's decreased profitability was caused by the actions of management. Aldcroft and Dodgson argued that companies unnecessarily constructed weakly performing lines for competitive reasons.[988] Similarly, Cain, Crafts, Mills and Mulatu, contended that decision-makers abandoned profit-maximisation and adopted strategies and policies that suited their own aims and desires, for example maintaining unnecessarily high technical standards.[989] Aldcroft and Cain argued that service competition seriously damaged companies' profitability after 1870, and raised companies' working costs excessively.[990] Conversely, Mitchell, Chambers, Crafts, Leunig, Mulatu and Mills contended that the competitive, legislative and governmental pressures acting on industry leaders were weak and they therefore had considerable scope to neglect potential productivity gains and cost reductions. [991] Arnold and

[986] Ashworth, *An Economic History of Britain, 1870-1939*, p.119-126
[987] Irving, 'The Profitability and Performance of British Railways,' p.49; Pollins, *Britain's Railways an Industrial History*, p.93
[988] Dodgson, 'New, disaggregated, British railway total factor productivity growth estimates, 1875 to 1912', p.639; Aldcroft, *British Railways in Transition*, p.9-14
[989] Cain, 'Railways 1870-1914: The maturity of the private system', pp.112-114; Crafts, Mills, and Mutlau, 'Total factor productivity growth on Britain's railways, 1852–1912', p.632
[990] Aldcroft, *British Railways in Transition*, p.14-18; Cain, 'Railways 1870-1914: The maturity of the private system', pp.115-117
[991] Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig, and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632

McCartney, Channon, and Irving also argued that to some degree railways started to act like public services from the 1880s in an attempt to preserve their commercial freedom at a time when government increasingly legislated on rates and safety. However, this augmented companies' facilities and services excessively, which increased their operating costs and decreased their profitability.[992]

This thesis has helped clarify these debates. However, it has also added depth to them. It has gone beyond simply arguing that the quality of the LSWR's operational management between 1870 and 1911 principally determined its financial performance, it has also analysed the factors that underpinned the policies and strategies decision-makers adopted, for example the company's management structure, traffic managers' careers, and directors' external business interests. Therefore, being only the second detailed study of a British railway's management between 1870 and 1914, this thesis is a valuable addition to the historiography. This conclusion summarises my findings, highlights how they address issues in the literature and examines avenues for future research.

7.2. Decision-makers

Chapter 2 argued that the effectiveness, cohesiveness and efficiency of the LSWR's management between 1870 and 1911 was underpinned by its corporate form. As Channon and Bonavia argued was the case for most British railways between 1870 and 1914, the LSWR possessed a structure where decision-making authority was concentrated at the organisation's head and the departments were separated along functional lines.[993] What this thesis has repeatedly highlighted, however, is that the centralisation of authority within the LSWR did, as Quail argued,[994] undermine its operating performance. It put excessive responsibility for the ensuring the company's efficient working on a small number of individuals at the organisation's head, who rarely delegated decision-making authority to those below them. It was therefore their skills, abilities and capacity to work together that determined how well the company was managed between 1870 and 1911.

[992] Arnold and McCartney, 'Rates of return,' p.54-57; Channon, Geoffrey, *Railways in Britain and the United States, 1830-1940*, (Aldershot, 2001), p.126; Irving, 'The Profitability and Performance of British Railways 1870-1914', p.54-55,

[993] Bonavia, *The Organisation of British Railways*, p.153-154; Channon, *Railways in Britain and the United States, 1830-1940*, p.42 and p.284; Irving, *The North Eastern Railway Company*, p.256

[994] Quail, John, 'The Proprietorial Theory of the Firm and its Consequences', in Wilson and Thomson, *The Making of Modern Management*, p.13

Because so few individuals had decision-making authority within the LSWR between 1870 and 1911, it was deemed important to analyse their careers and lives, to see how these may have influenced the company's strategies and policies. I first examined the lives of the traffic managers. Chapter 3 argued that almost all the LSWR's traffic managers working between 1870 and 1911 had spent their entire careers within the Traffic Department, or even one section of it, on the clerical promotional ladder. They therefore had little experience of management practices used within external businesses or railways, developed unadventurous views on railway administration, were highly socialised within the LSWR's established operating practices and, ultimately, had limited capacity to think creatively about ways to improve the company's management. The LSWR's case therefore supports Gouvish, Pollins, Wilson and Thomson's arguments that between 1870 and 1914 British railways had, as the latter put it, a 'highly introverted approach to recruitment,' which limited managers' ability to think creatively.[995] As Sections 7.6 to 7.8 discuss, these introverted career paths hindered the efficiency and effectiveness of the company's management between 1870 and 1911.

This thesis has also done what Channon and Hughes' studies of the GWR and LNER's board members were unable to: to suggest how a railway company's policies and strategies were influenced by its directors' external business activities.[996] Chapter 3 demonstrated how directors' external business interests shaped their level of involvement with the LSWR's management. Between 1870 and 1881 the board was highly active in the company's affairs because, firstly, most directors had few external business interests and could dedicate their time to the railway. Secondly, many of them had been with the company since the 1850s, when it was geographically smaller and organisationally less complex, and they still expected to play a leading role in its operational management. However, as section 7.5 discusses, the high level of oversight and control the directorate had over the company's operations was a negative influence on its financial performance in the period.

A small group of directors were also active in the company's management after 1898. It was suggested that because most directors were heavily engaged outside the company, those who oversaw its affairs closely were two ex-LSWR senior managers, Scotter and Macaulay, and two directors who had joined the board in the 1870s. As these individuals had been with the LSWR for

[995] Gourvish, *Railways and the British Economy*, p.46; Gourvish, 'A British Business Elite',p.297-299; Pollins, *Britain's Railways an Industrial History*, p.68; Wilson and Thomson, *The Making of Modern Management*, p.58

[996] Channon, *Railways in Britain and the United States*, p.192; Hughes, 'The Board of Directors of the London & North Eastern Railway,' p.175

considerable periods of time, and presumably had little experience of how railways' operating practices had developed outside it, their thinking on railway management was conditioned by the practices used within it. Thus, their narrow opinions on policy were similar to those of the senior traffic managers and the General Manager. The result was that there was minimal improvement of the LSWR's financial performance after 1902, as all the company's decision-makers had little basis upon which to critically appraise the embedded operating practices they had worked with for decades. They also seemingly lacked the capacity to innovate (see section 7.8).

Overall, therefore, this is the first study to demonstrate in detail how the careers and lives of one British railway company's decision-makers influenced its policies and financial performance between 1870 and 1914 (described in more detail in sections 7.6 to 7.8), and for this reason it is a valuable addition to the literature.

7.3. Capital investment

Before discussing the LSWR's operational management between 1870 and 1911, it is important to examine the company's capital investment strategies to see how these influenced its financial performance. I have demonstrated that while the LSWR's capital projects had varied success in this period, overall they were not a significant drag on its profitability, if at all.

Chapter 4 importantly established the environmental conditions that shaped decision-makers' approach to capital investment. Before 1900 the LSWR's directors and managers were evidently under little pressure to thoroughly examine the virtue of each investment decision they made or invest in projects that may have maximised the company's profits. This was for numerous reasons. Firstly, the company's profits were always high enough before 1900 to allow it to raise capital with relative ease: between 1870 and 1900 its capital value rose from £18.0 million to £44.3 million, or by 146 percent.[997] Furthermore, the LSWR's shareholders were largely passive in the decision-making process and seemingly never objected to capital projects the company initiated. Lastly, because the LSWR's traffic levels had increased almost continually since the 1830s, decision-makers actions were not constrained by fears that traffic and revenue growth would stop, and, thus, they believed that in the long-run every investment would be worthwhile. These conditions gave LSWR decision-makers considerable freedom to invest as they saw fit.

Chapters 4 and 5 examined the LSWR's line building projects between 1870 and 1897. Decision-makers almost always initiated the construction of lines an *ad hoc* manner to defend the

[997] Board of Trade, *Railway Returns*, 1870-1900

company's regional hegemony. Most of these lines performed poorly. But decision-makers expected this, as they possessed good knowledge that the territories through which they would pass were unlikely to generate much traffic. Yet, with few constraints of their freedom of action, and trusting that traffic would always grow, decision-makers possibly believed that profitable lines could cross-subsidise these new routes for decades if required. The most notable case of such line-building behaviour was the LSWR's extensions into the West Country, which were likely constructed for competitive reasons, but performed poorly after they were opened. The LSWR's case therefore supports Casson, Dodgson and Aldcroft's arguments that after 1870 this form of capital investment activity was a drain on railway companies' profits.[998] Nevertheless, as Arnold and McCartney and Gourvish argued was the case for British railways generally after 1870, it is important not to overstate the effect such network extensions had on the LSWR's profitability.[999] The thesis showed that compared with changes in the effectiveness and efficiency of the company's operational management, poorly performing lines likely diminished its overall profitability to a small, even marginal degree.

Additionally, I analysed in detail the LSWR's purchase of lines it leased or worked between 1870 and 1884, something that has never been looked at by scholars. Indeed, Irving did not mention that the NER engaged in this form of investment activity before 1900, and Gourvish did not indicate that the LCDR, Metropolitan Railway, SER, MSL or MDR did either.[1000] Chapter 4 showed that when purchasing leased and worked lines the LSWR directors' had a semblance of a guiding strategy before 1884. They wished to consolidate the company's network to eliminate financially unfavourable working agreements and remove unstable elements within its sphere of influence. It is suspected these purchases, which were made when the opportunity arose, considerably raised the LSWR's capital expenditure for poor returns. Yet, once the loose strategy of network consolidation became embedded in the board's thinking, it was seemingly never reappraised until Scotter became General Manager in 1885; a reflection of the fact there were few constraints on directors' freedom of action and little compelling them reassess the virtue of the strategy they had adopted.

[998] Casson, *The world's first railway system*, p.17, p.104; Aldcroft, *British Railways in Transition*, p.14-18; Dodgson, 'New, disaggregated, British railway total factor productivity growth estimates, 1875 to 1912', p.639

[999] Gourvish, 'The Performance of British Railway Management after 1860', p.198; Arnold, and McCartney, 'Rates of return', p.56

[1000] Irving, *The North Eastern Railway*, p.159-181; Gourvish, 'The performance of British railway management', p.187-200

What has been demonstrated is that the LSWR's capital projects between 1870 and 1911 were most successful when they served a well-developed strategic objective. Like many other companies, [1001] the LSWR repeatedly initiated numerous major capital projects between 1880 and 1901 to alleviate traffic congestion. While it is likely many of these investments improved the company's working efficiency, it should be stressed that decision-makers' responses to persistent capacity problems were always similar to actions they had taken in the past. Projects to widen the main lines near London were initiated in 1880 and 1896, while Waterloo Station was enlarged in 1878 and 1885, and then a reconstruction of it began in 1901.[1002] This lack of innovation in how the company solved the problem of main line congestion was again indicative of the fact that before 1900 decision-makers were under little pressure from any quarter to investigate or develop alternative responses to the challenges they faced that may have been less of a burden on the capital account (see Chapters 4 to 6).

Only the LSWR's purchase and augmentation of Southampton Docks was an outright success. While this purchase in 1892 was a reactive measure to prevent the SDC failing, the aggressive policy of dock expansion the company pursued, principally under Scotter's leadership, improved its profitability after 1900; it possibly offset a loss of revenue to suburban tram competition and halted the fall in its average revenue per ton of merchandise hauled (see Chapters 5 and 6). Indeed, the success of the development of the Southampton Docks mirrored Irving's argument that the NER's investment in the Hull docks grew its trade in the same period. This could suggest that when railways invested in docks facilities between 1870 and 1914 such ventures gave good returns; although without other case studies this is unclear.[1003]

Overall, between 1870 and 1911 the LSWR's different capital projects had mixed impacts on its profitability. Nevertheless, it was operating factors that principally determined the company's financial performance between 1870 and 1911. Indicative of this fact, while over the whole period the LSWR's capital burden increased considerably, it ROCE fluctuated. Amongst Britain's fifteen largest railway companies it was below-average during Scott's tenure as general manager before 1884, while by 1897 Scotter's reforms of the company's operating practices had restored it to the similar levels as in 1872 (five-year moving average).[1004] Thus, this finding therefore gives

[1001] Irving, *The North Eastern Railway*, p.169; Gourvish, *Railways and the British Economy*, p.45
[1002] Chivers and Wood, *Waterloo Circa 1900: An Illustrated Tour*
[1003] Irving, *The North Eastern Railway*, p.169
[1004] Mitchell, Chambers and Crafts, 'How good was the profitability of British railways 1870-1912?' p.807

weight to Gourvish and Irving's arguments that companies' capital investment strategies were not the primary cause of the British railway industry's diminishing profitability after 1870.[1005]

7.4. External operating factors

This thesis has also determined how external pressures shaped the LSWR's profitability between 1870 and 1911. Government legislation was possibly not a major influence on the company's profitability after 1870, as Gourvish, Leunig, Mulatu and Mills, and others have argued was the case for British railways generally after 1870. [1006] The 1889 and 1893 Regulation of Railways Acts, which legislated on safety and employees' hours of work respectively, [1007] seemingly did not increase the company's operating costs to any great degree, if at all (see Chapters 4 and 6). I have tentatively argued that the Railway and Canal Traffic Act of 1894, which fixed the maximum rates railways could charge for goods haulage, may have harmed the LSWRs profitability to some extent, as this possibly meant the company was unable to raise rates to offset a depression in its revenue because of the agricultural depression before 1900, as well as an increase in its operational costs from the late-1890s. However, it is unlikely to have been a 'millstone' around the LSWR's 'neck', [1008] as Cain argued it was for the whole industry. The company primarily carried passengers, meaning the Act affected a smaller portion of its business compared with the larger, mainly freight-carrying railways. Secondly, because of the LSWR's expansion of the Southampton Docks it is likely this increased its revenue per ton hauled after 1900, possibly because the company was hauling a more varied and more profitable array of goods (see Chapter 6).

Also, like Irving argued was the case with most railways, wage increases also augmented the LSWR's operating expenditure.[1009] However, the LSWR's profitability was likely damaged more than it needed to be by rising wage costs in the 1880s (and possibly thereafter), as Scott, the General Manager, kept pay in the Traffic Department unnecessarily high (see Chapter 4). Thus, the LSWR's case very cautiously supports Crafts, Mills and Mulatu's suggestion before 1900

[1005] Gourvish, 'The Performance of British Railway Management after 1860', p.198; Irving, *The North Eastern Railway Company*, p.277
[1006] Gourvish, *Railways and the British Economy*, p.46; Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig, and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?' p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632
[1007] Gourvish, *Railways and the British Economy*, p.53-56
[1008] Cain, 'Traders versus railways: the genesis of the Railway and Canal Traffic Act of 1894,' p.80
[1009] Irving, 'The Profitability and Performance of British Railways,' p.49

decision-makers had 'ample opportunity' to neglect cost reductions and productivity improvements and pursue their own goals.[1010]

Additionally, competitive pressures on the LSWR's decision-makers were not strong. Aldcroft and Cain argued that service competition significantly cut into railways' profits, especially from the 1880s.[1011] By placing the LSWR's competitive activity in the context of its overall business history, the thesis demonstrated that the company's profitability was far more dependent on how effectively its functions were managed. Indeed, the competitive services the LSWR ran were on the margins of its activities, while, as Simmons argued, after 1885 the company was more interested in growing its more extensive non-competitive traffic.[1012] Thus, the LSWR's case gives weight to Mitchell, Chambers, Crafts, Leunig, Mulatu and Mills' arguments that the competitive pressures acting on railways' decision-makers were weak before 1900 (see Chapters 5 and 6).[1013]

Only growing high-volume, low-margin third class passenger traffic, particularly in suburban districts, put significant pressure on the LSWR's profitability after 1870, as Ashworth considered was the case generally in the British railway industry at the time.[1014] Nevertheless, rather than thinking this growth diminished the company's profitability, decision-makers believed it sustained its financial health (see Chapter 4). Indeed, this thesis has partially called into question numerous academics' arguments that railways' operating expenses rose from the 1880s because they started to act like public services in an attempt to preserve their commercial freedom, in a period when government was increasingly legislating on rates and safety.[1015] Indeed, it has been suggested that Scotter's improvements of the LSWR's passenger services actually grew the business.

This thesis has therefore attempted, given the available evidence, to determine how external pressures impacted on the LSWR's profitability between 1870 and 1911. It showed that while growing third-class suburban traffic and increased wages did harm the company's profitability;

[1010] Crafts, Mills, and Mutlau, 'Total factor productivity growth on Britain's railways, 1852–1912', p.632
[1011] Aldcroft, *British Railways in Transition*, p.14-18; Cain, 'Railways 1870-1914: The maturity of the private system', pp.115-117
[1012] Simmons, 'South Western v. Great Western,' p.32
[1013] Mitchell, Chambers, and Crafts, 'How good was the profitability of British railways 1870-1912?', p.829; Crafts, Leunig, and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', p.355; Crafts, Mills and Mulatu, 'Total factor productivity growth on Britain's railways 1852-1912', p.632
[1014] Ashworth, *An Economic History of Britain*, p.119-126
[1015] Arnold and McCartney, 'Rates of return,' p.54-57; Channon, Geoffrey, *Railways in Britain and the United States, 1830-1940*, (Aldershot, 2001), p.126; Irving, 'The Profitability and Performance of British Railways 1870-1914', p.54-55,

competition and government legislation had little effect. Thus, my work is valuable as it has helped to clarify some of the outstanding issues in the literature. Nevertheless, what this thesis has principally shown is that all these factors were secondary influences on the LSWR's financial performance between 1870 and 1911; the primary one being the quality of the company's operational management.

7.5. Coordination

This thesis is only the second detailed study of the dynamics a British railway company's management between 1870 and 1914. It has argued two factors principally determined the LSWR's management quality, operational cohesiveness and, ultimately, its financial performance between 1870 and 1911. Both were linked to the fact that the company's functional structure meant only a small number of individuals at the organisation's head controlled its operating and administrative policies.

Firstly, I argued that because the department heads usually dominated activities within their functionally separate departments, the quality of the company's management was partially determined by the board or General Manager's capacity to provide them with leadership, oversee their activities effectively, and get them working together. Contrasting the coordination and oversight the LSWR department heads received between 1870 and 1897 demonstrates this. Chapter 4 described how between 1870 and 1881 the LSWR's financial performance deteriorated to a point whereby at the end of the period it was Britain's least profitable major railway. While the next section demonstrates that this was largely because of the poor quality of the company's operating practices, it was also because the activities of the department heads were poorly overseen and critiqued by the board. The primary reason for this was that because the directors had few external business interests (see section 7.2), and given most had learnt about railway management from within the LSWR, they lacked the knowledge or experience to adequately assess or challenge the inefficient and outdated management practices used by Scott in the Traffic Department and Beattie in the Locomotive Department.

Furthermore, between 1881 and 1884 the department heads' activities were coordinated particularly poorly by those above them in the hierarchy. In the former year Scott, who until then had retained direct oversight of the Traffic Department, was given general oversight of the

company's functions.[1016] Yet, the LSWR's management quality declined further. He never gained authority over the department heads' activities and the directors increasingly favoured the opinions of Adams, who had joined the company from another railway, on matters of policy. This would not have been so bad, had it not been for the fact that Adams' and Scott's philosophies of railway management never aligned. Thus, before 1884 the LSWR never developed a coherent strategy to reduce its excessive operating costs. But also, because Adams gained considerable independence to make policy as he so wished in the Locomotive Department, he enacted a policy, the building of heavier locomotives, which unnecessarily and unexpectedly raised the Engineering Department's costs (See Chapter 4).

A different situation existed after 1885. Between then and 1892 Scotter used his considerable experience of railway management outside the LSWR to gain authority over the department heads' activities and, consequently, oversaw and coordinated their actions effectively. Indeed, he provided the company with something it had lacked before 1884, leadership and a strategic direction. He tasked his department heads with working towards his goals of reducing operating costs and 'expanding the concern'. Consequently, by 1892 the LSWR was one of Britain's best performing railway companies (see Chapter 6).

My study of the LSWR's management between 1870 and 1911 is therefore important as it gives weight to existing arguments in the literature. It supports Bonavia's contention that within railway companies that used functional department structures between 1870 and 1914, department heads, who could have considerable authority over their own fiefdoms, could act independently in ways that damaged overall company efficiency. [1017] However, it also supports Channon's suggestion that the operational effectiveness of companies using functional governance structures possibly depended on whether General Managers' had the 'authority, skill and energy' to persuade department heads to cooperate and consider operational matters outside of their immediate remits.[1018] Indeed, Scotter's effective oversight and coordination of the LSWR's different departments demonstrates that to some degree the company's financial performance between 1870 and 1911 was dependent upon a post broadly equivalent to a modern chief executive being created.

[1016] *The South Western Gazette*, December 1881, p.2
[1017] Bonavia, *The Organisation of British Railways*, p.17-18
[1018] Channon, *Railways in Britain and the United States, 1830-1940*, p.42

7.6. Senior managers' stagnation

While the quality of the oversight and coordination the LSWR department heads received was an important influence on the company's financial performance between 1870 and 1911, this thesis has revealed that primarily it was decision-makers' concepts and understanding of railway management that shaped its profitability. All the chapters demonstrated that within the LSWR there was a tendency for decision-makers to develop narrow views on railway management. Indeed, throughout the period there was little indigenous development or advancement of the company's operational and administrative practices.

Decision-makers' thinking on railway management possibly stagnated or became narrow for two reasons. Firstly, in many cases decision-makers, particularly department heads, occupied positions of authority for decades where they had complete control over their affairs and little criticism of their activities. Thus, their thinking frequently stagnated or became narrow over time, meaning the value or efficiency of established operational practices was infrequently reassessed.

Thus, Chapters 4 to 6 demonstrated many cases where, because senior managers had been in position decades, established operating practices were not updated to efficiently manage changes in the nature of the company's business. Most notable was Scott's management of the Traffic Department between 1870 and 1881. Scott had become the LSWR's Traffic Manager in 1852. By the 1870s, with the directors inadequately critiquing his actions, they not having any experience of railway management outside the LSWR (see Section 7.2), and with no known criticism of his policies by senior traffic managers, by the 1870s the train control methods he was employing in the department, which he had established in the 1850s and 1860s, were not adapted to manage the company's increasing traffic efficiently. This was the principal cause of the LSWR becoming the poorest financially performing major British railway company between 1870 and 1884. However, the stagnation in railway management thought and practice under Scott was not unique. By the end of Adams' tenure as Locomotive Superintendent between 1878 and 1895 the efficiency within the locomotive works had waned because established practices were not updated to manage efficiently its enlarged operation. Additionally, after 1900 Scotter and the LSWR's three active directors had been with the company for decades and, thus, they too had developed narrow outlooks on company policy, which reinforced similar viewpoints held by senior traffic managers and the General Manager. Consequently, this alignment of the directors' and managers' outlooks on operating practice was, however, a detrimental influence on the company's financial performance (see section 7.8).

7.7. Deficient career paths

But LSWR decision-makers' narrow outlooks operating practice had a second source between 1870 and 1911. One of this thesis' major contributions to the existing scholarship on British railway management between 1870 and 1914 is that it has demonstrated how the introvert and narrow careers of the LSWR's traffic management class significantly influenced its financial performance. As section 7.2 described, these career paths meant that the majority had spent all their lives working within the Traffic Department and had experienced little of railway management outside it. Therefore, when they reached the few positions with decision-making authority within the company, they had little basis upon which to critically appraise or challenge embedded operational practices, and their scope to innovate was limited.

Aspects of the Traffic Department's management after 1902 most exemplify how traffic managers' career paths influenced the company's financial performance between 1870 and 1911. After 1900 the LSWR's financial performance declined because of external factors. Firstly, from 1897 material, fuel and wage costs increased significantly. Furthermore, in the early 1900s the company's suburban services came into competition with new tram systems and, consequently, passenger traffic growth stalled. Lastly, as Irving argued was the case for most British railway companies,[1019] the LSWR's ability to raise capital diminished, meaning the amount that was, theoretically at least, available to invest in projects that may have improved its profitability was lessened. These new trading circumstances therefore challenged LSWR decision-makers to critically appraise how efficiently the company was run and engage in technological and managerial innovation. Indeed, this was a situation decision-makers throughout the British railway industry faced after 1900.[1020]

Yet, after 1902 the attempts to do this by Owens, the General Manager, and Holmes, the Superintendent of the Line, were piecemeal. Because they had spent almost their entire careers within the Traffic Department and, thus, had learnt all they knew about railway management from within it, they were unable or unwilling to critically analyse and reform how the parts of the business were run. Indeed, their responses to the new challenges they faced were mere

[1019] Irving, 'British Railway Investment and Innovation, p.63
[1020] Crafts, Leunig and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', p.355; Gourvish, *Railways and the British Economy*, p.45; Irving, 'The Profitability and Performance of British Railways 1870-1914', p.60-62

adaptations of existing operational practices, while innovation of any sort within the Traffic Department was limited. Most seriously, senior decision-makers narrow outlooks on policy, combined with the fact the directors held similar perspectives, meant that after 1905 the LSWR delayed initiating a suburban electrification project to win back the considerable traffic it had lost to the trams. Thus, the evidence suggests that by 1911 the company was not as efficient or profitable as it could have been (see Chapter 6).

This thesis is therefore the first study to demonstrate how a British railway company's managerial recruitment patterns before 1914 actually influenced its financial performance (see section 7.2). Particularly, my findings have suggested how the nature of different railways' management cultures may have been a factor that determined their responses to their depressed profitability after 1900, something most scholars analysing the performance of British railway management in this period have never discussed. Indeed, Crafts, Leunig, Mulatu, and Gourvish have simply argued that companies improved their operational efficiency, chiefly in the case of goods train workings, without going into much detail about how effectively different railways responded to their more difficult trading environment.[1021]

7.8. Knowledge transfer

However, the LSWR's management practices did advance between 1870 and 1911, but only when new senior managers were appointed from external sources and brought to the company new, modern or innovative ideas on railway management. For this reason the thesis is important as it is the first study to discuss how information about operating practices may have moved between British railway companies between 1870 and 1914.

Two examples of this knowledge transfer are worth noting. Firstly, before 1878 the LSWR's directors had been largely isolated from developments in operating practice outside the company. Indeed, because of their few external business experiences, and the fact they had learnt about railway management from inside the LSWR, they lacked scope to understand how Scott's obsolete train control and rolling stock policies were harming company's financial performance (See Section 7.2). Consequently, when Adams became Locomotive Superintendent in 1878, after having worked within other railways, he bought to the LSWR experience of railway

[1021] Crafts, Leunig and Mulatu, 'Corrigendum: Were British railway companies well managed in the early twentieth century?', p.355; Gourvish, *Railways and the British Economy*, p.45

operation used outside it, and thus was able to challenge, with limited success, Scott's management of traffic matters (see Chapter 3).

Most notably, Scotter's considerable improvement of the LSWR's financial performance after 1885 hinged on him applying his wide-ranging knowledge of operating practices used elsewhere in the railway industry to the company's operations. He modernised the role of the general manager, had the capacity to critique and direct the department heads' actions and, most importantly, modernised the Traffic Department's operating practices (see Chapter 5).

Between 1870 and 1911 the transfer to the LSWR of knowledge on operational practices used outside it was therefore an important factor in determining how efficiently the company was run and its profitability. Indeed, there was no known knowledge transfer of management techniques or ideas between departments in this period, a symptom of the fact that the company's functional structure kept them operationally isolated. It is important to note, however, that all the senior managers who joined the company from outside (Scotter, Adams, Drummond and Jacomb) were already working in other British railways. No managers joined the company from other industries. The LSWR's case therefore gives some weight to Pollins' argument that before 1914 there was some degree of managerial inbreeding within the British railway industry. Nevertheless, as Gourvish argued of British railways' chief executives, the LSWR's case also suggests that there was not necessarily executive immobility within the industry.[1022]

7.9. Conclusion

Overall, the thesis' major contribution to the literature is that it has supported scholars' arguments that the British railway industry's declining profitability between 1870 and 1914 was determined by how well companies were managed. Nevertheless, it has revealed that many questions remain unanswered as to what influenced railways' financial performance in the period.

Clearly, the trading environment British railway companies were working in before 1900 needs to be understood better. Indeed, little analysis exists as to whether other companies' profit margins were under pressure to a lesser or greater extent than the LSWR's was from such factors as high-volume low-margin passenger traffic, competition, shareholders or government legislation. Indeed, the mere fact that this thesis is the first study to suggest that a railway's directors and

[1022] Pollins, *Britain's Railways: an Industrial History*, p.68; Gourvish, 'A British Business Elite,' p.315

managers had a belief that traffic and revenue would consistently grow, implies that it is not yet clear what industry leaders were thinking about the nature of their businesses.

Furthermore, the capital investment strategies railways' decision-makers employed have also been rarely discussed in detail by scholars and require more investigation. For example, did railways solely build lines to defend their territory, as was so in the LSWR's case, and to what extent were other factors, such as directors' external business interests, playing a role? What the findings of this thesis can also suggest is that scholars have focussed far too much on companies' line-building projects. Other areas of capital investment have been rarely addressed. For example, how did the acquisition of leased and worked railways, and dock facilities impact on companies' profitability, if they acquired them at all?

Mostly, however, because of the lack of detailed research on British railway management between 1870 and 1914, this thesis has possibly raised more questions than it has answered on the subject. Principally, I highlighted the importance of knowledge transfer in improving the LSWR's management between 1870 and 1911. However, given the company's operating practices only advanced when new senior managers were appointed from other railways, and there was very little positive knowledge transfer between departments within the company, this suggests there was more innovation and development in practice outside the LSWR in the period. It is therefore important to understand the conditions that allowed this development to occur. Did directors transfer from their external business interests knowledge and experience of management techniques used elsewhere in industry to the railways they served? Were other railways' managers as insulated from how operational practice was developing throughout the industry? Did the views of other companies' senior officials on railway management become as narrow as the LSWR senior managers' did? In other companies was greater decision-making authority devolved to managers lower down the hierarchy, which potentially gave them greater opportunity to think creatively about ways to improve operational techniques? Lastly, how did information about railway organisation and administration move from one company to another?

Ultimately, this thesis cannot even begin to answer these broader questions. But this is not to downplay its value. It is only the second detailed analysis of how a British railway company was managed between 1870 and 1914. My work on the LSWR is therefore an important contribution towards resolving the question that has challenged academics for over fifty years: what caused the British railway industry's declining profitability between 1870 and 1914?

Appendix A: Chief Administrators and Officials

Chairmen and Deputy Chairmen

Chairmen	
Capt. Charles E. Mangles	1859-1872
Charles Castleman	1873-1874
The Hon. Ralph H. Dutton	1875-1892
Wyndham S. Portal	1892-1899
Lieut-Col. The Hon H.W. Campbell	1899-1904
Sir Charles Scotter, Bart	1904-1910
Sir Hugh Drummond, Bart	1911-1922

Deputy Chairmen	
Charles Castleman	1859-1872
Edward J. Hutchins	1873-1874
Wyndham S. Portal	1875-1892
Lieut-Col. The Hon H.W. Campbell	1893-1898
Sir Charles Scotter, Bart	1899-1904
Sir Hugh Drummond, Bart	1904-1910
William Wyndham Portal	1911-1922

General Managers

Archibald Scott	1870-1884 (Traffic Manager from 1852)
Sir Charles Scotter	1885-1897
Sir Charles Owens	1898-1911
Sir Herbert Ascombe Walker	1912-1922

Superintendent of the Line/Traffic Superintendent

Superintendent of The Line	
William Williams	1868-1874
Edgar William Verrinder	1874-1882
John Tyler	1882-1884
George Turner White*	1893-1899
Sir Sam Fay*	1899-1901
Henry Holmes*	1902-1916

Traffic Superintendent	
Edgar William Verrinder*	1882-1893

*Head of the Traffic Department

Goods Manager

James Haddow	1865-1887
Charles Owens	1887-1897
Alfred Malby	1897-1912

Locomotive Superintendent/Chief Mechanical Engineer/Mechanical Engineer

Joseph Beattie	1850-1871
William Beattie	1871-1877
William Adams	1878-1895
Dugald Drummond*	1895-1912
Robert Urie**	1912-1922

*Chief Mechanical Engineer from 1904
** Mechanical Engineer

Resident Engineer

John Strapp	1853-1870
William Jacomb	1870-1887
Edmund Andrews	1887-1901
William Jacomb-Hood	1901-1914

Secretary

Frederick Clarke	1862-1880
Frederic Julius Macaulay	1880-1898
Godfrey Knight	1898-1922

Appendix B: Biographies of LSWR's major decision-makers 1870-1911

Adams, William – *Locomotive Superintendent, 1878-1895*

William Adams was born in Limehouse on the 15 October 1823 and was the son of John Samuel Adams, Resident Engineer of the East and West India Dock Company. He joined the Engineering Department of this company, and eventually was apprenticed at seven years of age to Miller and Ravenhill, the marine engineers at Blackwall. He then worked for P. Taylor and Company at their yard at Marseilles and thereafter obtained a position with Sardinian Navy in the late 1840s. In 1852 he returned to England and, after being employed in various capacities, was appointed as the locomotive superintendent of the North London Railway in 1855. In 1873 he took up the same post on the Great Eastern Railway, and moved to become locomotive superintendent of the LSWR in 1878. His health started to decline in the early-1890s and he retired in 1895. On 7 August 1904 he died peacefully at his home in Putney.[1023]

Andrews, Edmund – *Resident Engineer, 1887-1901*

Andrews was born in either 1837 or 1838. By 1853 he was a pupil of Albinus Martin, a consulting engineer in Westminster (Martin had also been the LSWR's resident engineer between 1837 and 1849). He then worked on the Shadwell Extension of Works of the London Dock Company, after which he was engaged in the design and construction of numerous railway lines, including that of the Staines, Wokingham and Woking Junction Railway. Appointed to the LSWR's staff in 1857, he became chief assistant to the William Jacomb, the resident engineer, from 1870, and in 1882 was made assistant engineer. On the death of Jacomb in 1887 he was made the company's resident engineer and held the post until his retirement until 1901. He died on 15 October 1912 at his home, Warren Lodge, in Hampton Wick, where had lived for nearly thirty years.[1024]

Beattie, Joseph – *Locomotive Superintendent, 1850-1871*

Joseph Beattie was born in Ireland on 1 July 1808. He schooled in Belfast and was apprenticed to his father, an architect, before moving to England in 1835 to serve as assistant engineer to Joseph Locke. In this capacity he worked on the building of Grand Junction and London and South

[1023] Casserley, London and South Western Railway Locomotives, p.14-15
[1024] *Railway Magazine*, 1 November 1912, p.9

Western Railways, and became the carriage and wagon superintendent of the latter in 1838. In 1850 he was appointed the company's locomotive superintendent, a post he held until he succumbed to diphtheria on 18 October 1871, aged sixty-three.[1025]

Beattie, William – *Locomotive Superintendent, 1871-1877*

William Beattie was born in 1842 or 1843 and was the son of Joseph Beattie, the LSWR's Locomotive Superintendent between 1852 and 1871. Little is known of his early life; however, he joined the company as a draughtsman in the Locomotive Department in 1862 and seven years later became its inspector of hydraulic machinery. In 1871 Beattie was made locomotive superintendent. He was highly unsuccessful in this position, and while it was recorded that his resignation in 1877 was due to ill-health, the reality is that he was he was forced out of the company.[1026]

Campbell, Lieutenant-Colonel The Hon Henry Walter – *Director, 1872-1811; Deputy-Chairman, 1893-1899; Chairman, 1899-1904*

Born on 23 March 1835, Henry Walter-Campbell was the son of John Frederick Campbell of Cawdor, 1st Earl Cawdor of Castlemartin and Lady Elizabeth Thynne. He joined the army and obtained the rank of Lieutenant-Colonel in the service of the Coldstream Guards. He served in the Crimean War, seeing action at the Battles of Alma and Inkerman, as well as the siege and fall of Sebastopol. It is unknown when he left the army, but he joined the LSWR board in 1872. He was deputy chairman between 1892 and 1899, and then chairman from then until 1904, when he returned to being an ordinary director. He died on 17 March 1910.[1027]

Drummond, Dugald – *Locomotive Superintendent, 1895-1912*

Dugald Drummond was born in Ardrossan, Ayrshire on 1 January 1840. At the age of sixteen years he began his engineering training at Forrest and Barr, Mechanical Engineers, Glasgow. He moved to become foreman erector at the Highland Railway company's Lochgorm Works in 1864, and after only two years moved to become works manager at the London, Brighton and South

[1025] Bradley, *LSWR Locomotives: The Early Engines 1838-53 and Beattie Classes*, p.3-5
[1026] Bradley, *LSWR Locomotives: The Early Engines 1838-53 and Beattie Classes*, p.5-6
[1027] *South Western Gazette*, January 1911, p.9; 'Campbell, Lt-Col Hon. Henry Walter,' in *Who Was Who, online ed.*, (Oxford, 2007), http://www.ukwhoswho.com/view/article/oupww/whowaswho/U184413, (December 6, 2013); 'Person Page – 4736', *The Peerage*, 12 February 2011, http://www.thepeerage.com/p4736.htm, (6 December 2013)

Coast Railway's Brighton Works. He was appointed locomotive superintendent of North British Railway in 1875, and then took up the same post on the Caledonian Railway in 1882. He resigned his post in 1890 after accepting a post in Australia. Yet, this fell through and he founded the Glasgow Railway Engineering Company in Govan. In 1895 he became the LSWR's locomotive superintendent, a post which he held his until his death in Surbiton in 1912. [1028]

Drummond, Brigader-General Sir Hugh Henry John– *Director, 1900-1922; Deputy-Chairman, 1904-1911; Chairman, 1911-1922*

Hugh Drummond was born at Covelly Court, Devonshire, on 29 November 1859. He was the son Sir James Hamlyn Williams Drummond, 3rd Baronet of Hawthornden, Midlothian, and Edwinsford, Llandilo. He joined the army, serving with rifle brigade in the Mediterranean and Ireland. However, on marrying Gertrude Rolle in 1880 he resigned his commission and accepted a partnership in the Exeter banking firm of Saunders & Company. This was merged with other banks and eventually became part of the National Provincial & Union Bank, of which Drummond was a director. He joined the LSWR board in 1900, became its deputy chairman in 1904, and took up the position of chairman in 1911. On the creation Southern Railway in 1923, which was formed from the merger of the LSWR, LBSCR and LCDR, he became its chairman. He died on 1st August 1924.[1029]

Dutton, The Hon. Ralph Heneage – *Director, 1854-1892; Chairman 1875-1892*

Dutton was born on 5 August 1821 and was the youngest son of John Dutton, 2nd Baron Sherborne and Hon. Mary Legge. He was educated at Trinity College, Cambridge, and was appointed the Deputy Lieutenant for Hampshire in 1852 and High Sheriff in 1872. He was Member of Parliament for South Hampshire from April 1857 to July 1865, when he was elected the member for Cirencester, a seat he held until 1868. He joined the LSWR board in 1854 and was the company's chairman from 1875 until his death in 1892.[1030]

[1028] Casserley, *London and South Western Railway Locomotives*, p.16-18

[1029] *The Times*, 2 August 1924, p.15; 'Drummond, Brig.-Gen. Sir Hugh Henry John', *Who Was Who, online ed.*, (Oxford, 2007), http://www.ukwhoswho.com/view/article/oupww/whowaswho/U195786, (6 December 2013); *South Western Gazette*, 1 September 1900, p.9; *Southern Railway Magazine*, August 1924, p.182;

[1030] 'Person Page – 30446', *The Peerage*, 24 August 2013, http://www.thepeerage.com/p30446.htm, (7 December 2013); *South Western Gazette*, January 1888, p.3; *South Western Gazette*, 1 November 1892, p.9-10

Fay, Sir Sam – *Superintendent of the Line, 1899-1901*

Sam Fay was born on 30 December 1856 in Hamble-le-Rice, in the New Forest. He was the second son of Joshua Fay, a farmer, and was educated at Blenheim House School in Fareham. In April 1872 he joined the LSWR as a junior clerk at Itchen Abbas Station, and thereafter was moved to Stockbridge in 1874, Turnham Green and Southampton in 1875, and Kingston in 1876. While here he completed a history of the LSWR, *The Royal Road*, and with two other clerks launched the *South Western Gazette*, the British railway industry's first staff magazine. In 1884 he then moved to the Traffic Superintendent's office at Waterloo, and soon after was appointed its chief clerk. His career then stalled. He appealed directly to Scotter, the LSWR's General Manager, who advanced him by giving him the position of Assistant Storekeeper. Fay was then seconded to the Midland and South Western Junction Railway as General Manager in 1893, and, after removing the company from chancery, was appointed the LSWR's Superintendent of the Line in 1899. He occupied this post for only a short time, becoming the General Manager of the financially weak Great Central Railway (GCR) in 1902. He considerably improved the company's financial position. During the First World War he was the Deputy-Chairman of the Railway Executive Committee, which ran Britain's railways during the conflict, until 1917, and between then 1919 he was Director of Movements at the War Office. After the GCR became part of the newly formed London and North Eastern Railway in 1923, he was not employed by it because of his age, but took up the chairmanship of Beyer-Peacock, the Machester locomotive building firm. Fay held this position until 1933 and died in Awbridge on 30 May 1953.[1031]

Haddow, James – *Goods Manager, 1865-1887*

James Haddow was born in 1831. Nothing is known of his early life. He was trained as a clerk in the offices of the LSWR's solicitors, Bircham and Son, and moved to the Law Clerk's office of the railway in 1852. After taking various posts he joined the Goods Department's staff in 1854 and after holding positions in London and Portsmouth was made assistant goods manager in 1864. Appointed goods manager in 1865, he held the post until 1887 when he retired; although he continued to advise the company on the goods traffic until 1888. He died on 31 December 1891.[1032]

[1031] TNA, RAIL 411/492, Clerical staff character book No. 2, p.711; *Great Central Railway Journal*, July 1906, p.3; Dow, *Great Central – Volume 3*, p,27-28, p.353, p.359; Fay, *The Royal Road*'; Simmons, Jack, 'Fay, Sir Sam', *The Oxford Companion to British Railway History*, (Oxford, 1997), pp.156

[1032] *South Western* Gazette, May 1888, p.8-9, p.11 *South Western Gazette*, 1 February 1892, p.3; TNA, RAIL 411/492, Clerical staff character book No. 2, p.263

Hedge, George Tullidge – *Outdoor Goods Manager, 1912-1922*

George Tullidge Hedge was born in either 1865 or 1866. He joined the London and North Western Railway in 1881 as a junior clerk after a year working for the delivery agents, Messrs Pickfords and Son. He worked in many departments within the railway, including delivery, shipping, correspondence and outside working. Eventually, he became chief clerk to district goods superintendent, F.W. West, then to E Wharton, the company's superintendent at Warrington and then to F.A. Sargent, the district superintendent at Garston. Lastly, in 1906, he was appointed to the company's agency at Bond Street under F.H. Dent, the London traffic Superintendent. In 1912 he was brought to the LSWR by H.A. Walker, its new general manager, who had been a goods manager on the LNWR previously. In 1923, when the LSWR became part of the newly formed Southern Railway, Hedge became its outdoor commercial manager, a job he held until 1930 when he was made redundant at the age of sixty-four. He died in 1943 in Llandudno.[1033]

Holmes, Henry – *Superintendent of the Line, 1902-1916*

Henry Holmes was born in 1863 and entered the service of the LSWR as a Junior Clerk at Lapford Station in 1878. He served at many stations around the company's network and was appointed Chief Clerk in the Superintendent of the Line's office in 1897. Two years later he was promoted to Assistant of the Line and, on Sam Fay leaving the company, he took over as Superintendent of the Line in 1902. He resigned in 1916 at the age of fifty-three because, it is suspected, he did not get on with the company's General Manager from 1912, Herbert Ashcombe Walker. He died in 1933.[1034]

Jacomb, William – *Resident Engineer*, *1870-1887*

William Jacomb was born in either 1831 or 1832. He served his apprenticeship under Isambard Kingdom Brunel, and with him he worked on many important works on the Great Western

[1033] *South Western Gazette*, March 1912, p.9; *Railway Magazine*, April 1912, p.349
[1034] *South Western Magazine*, 1 December 1916, p.292; TNA, RAIL 411/493, Clerical staff character book No. 3, p.215; Klapper, *Herbert Walker's Southern Railway*, p.50-52

Railway. He was also appointed by Brunel to supervise the construction of the steamship, *Great Eastern.* In 1870 Jacomb was appointed the LSWR's resident engineer on the resignation of John Strapp and held the post until his sudden death on 26 May 1887.[1035]

Jacomb-Hood, William – *Resident Engineer, 1901-1914*

William Jacomb-Hood was born in Lewisham in 1859 and was the son of the LBSCR's Engineer, and later director, Robert Jacomb-Hood. His education took place at Tonbridge, after which he entered the Crystal Palace School of Practical Engineering. He joined the LSWR in 1877 and was articled to William Jacomb, the company's resident engineer. After being employed on numerous line building projects, he was appointed London district engineer in 1888 and western district engineer in 1897. Upon the resignation of Edmund Andrews as resident engineer in 1901, he took over the position. A keen Fox-hunter, he was died while out on a hunt on 6 March 1914.[1036]

Macaulay, Frederic Julius – *Secretary, 1880-1898*; *Director, 1898-1912*

Frederic Julius Macaulay was born in Antrim, Ireland, on 14 July 1830 and was the son of Frederic William Macaulay, a solicitor. After completing his education, at the age of eighteen he went to work as a clerk for his cousin the Right Honourable Hugh Law, M.P. for Londonderry. He then was then engaged by the Lord Chancellor of Ireland and then on the Donegal estates of the Earl of Leitrim in connection with various works. When this engagement was concluded, he was recommended to the chairman of LSWR and, as a result, became second clerk in the Secretary's Office in 1850. In 1852 he was appointed chief clerk, in 1865 assistant secretary and in 1880 secretary. On his retirement in 1898 he became a director of the company. He died at his home in Clapham on 18 July 1912.[1037]

Malby, Alfred – *Goods Manager*, 1897-1912

Alfred Malby was born in 1849 and in 1864 joined the LSWR as a junior clerk in the goods offices at Nine Elms. In 1887 he was removed to the Waterloo goods manager's office and in 1893 was appointed the goods manager's chief assistant. When the Charles Owens became the company's

[1035] TNA, RAIL 411/493, Clerical staff character book No. 3, p.721; *South Western Gazette*, June 1887, p.90
[1036] *South Western Gazette*, 1 April 1914, p.8; TNA, RAIL 411/493, Clerical staff character book No. 3, p.551
[1037] *South Western Gazette*, April 1887, p.14; *South Western Gazette*, 1 November 1898, p.9; *South Western Gazette*, 1 August 1912, p.4-5; Klapper, *Herbert Walker's Southern Railway*, p.113 and p.126; Principal Probate Registry, *Calendar of the Grants of Probate and Letters of Administration made in the Probate Registries of the High Court of Justice in England*, (London, 1943), p.211

LSWR's general manager in 1898, Malby succeeded him as goods manager. He retired from this post in 1912 and died in October 1916.[1038]

Mortimer, Charles Smith – *Director, 1852-1892*

Born in either 1808, Charles Smith Mortimer was the third son of Charles Mortimer, treasurer of the East India Company. Little is known about his life; however, he had a career as a stockbroker. He was elected to the LSWR board in 1852 and was one of the company's longest serving directors, remaining on the board until his death in Thornton Heath on 12 January 1892.[1039]

Owens, Sir Charles – *Goods Manager, 1888-1897; General Manager, 1898-1911; Director*, *1912-1922*

Charles Owens was born in 1855 or 1856, and joined the LSWR as a junior clerk in Goods Audit Office in 1862 immediately after leaving school. In 1880 he was made chief clerk of the office and then in 1888, on the retirement of James Haddow, was appointed the company's Goods Manager. In mid-1897 he was made assistant general manager, in preparation for his promotion to the post of general manager on the retirement of Charles Scotter at the end of that year. He was general manager of the LSWR until 1912, when he retired and was elevated to the board. On the absorption of the LSWR into the Southern Railway in 1923, he became a director of that company, and, after resigning his seat in 1930, died on 17 January 1933.[1040]

Pirrie, William, 1st Viscount Pirrie – *Director, 1907-1922*

William Hames Pirrie was born on 24 May 1847 in Quebec, the son of James Alexander Pirrie and Elizabeth Margaret Swan Montgomery. He was educated at the Royal Belfast Academical Institution between 1858 and 1862, after which he obtained a position as a premium apprentice at Harland and Wolff, the Belfast shipbuilders. In 1868 he was appointed the company's chief draughtsman, and helped design the White Star Line's first Atlantic liners. By 1874 Edward Harland and Gustav Wolff, the firm's founders, wished to pursue other business interests and the twenty-seven year old Pirrie was made a partner. After Harland's death in 1895, Pirrie became

[1038] *South Western Railway*, 1 January 1898, p.10-11; *South Western Railway*, March 1912, p.260; *South Western Magazine*, December 1919, p.192
[1039] *South Western Gazette*, February 1892, p.3 and 11; *South Western Circular*, October 2008
[1040] *South Western Gazette*, 1 January 1898, p.9; TNA, RAIL 411/492, Clerical staff character book No. 2, p,457; 'Owens, Sir Charles John', *Who Was Who*, *online ed.*, (Oxford, 2007), http://www.ukwhoswho.com/view/article/oupww/whowaswho/U215063, (9 December 2013)

Harland and Wolff's chairman, and around this time he was elected lord mayor of Belfast. By the late-1890s Harland and Wolff's business was booming and he moved its headquarters to London. Pirrie also began to gain positions on the boards of various businesses related to shipping. One of these was on the LSWR's board, which he joined in 1907. He held this seat until 1922. However, by this time he had lost control of Harland and Wolff and he died of pneumonia on 7 June 1924.[1041]

Portal, Wyndham Spencer – *Director, 1861-1899; Deputy-Chairman, 1875-1892; Chairman, 1892-1899*

Wyndham Spencer Portal was born on 22 Jul 1822 and was the son of John Portal of Laverstoke and Freefolk Priors. He was educated at Harrow and then the Royal Military College at Sandhurst, and held positions as a Cornet in the North Hampshire Yeomanry Cavalry from 1842, and then as a Captain between 1853 and 1865. In 1848 he succeeded his father as proprietor of the Laverstoke bank-note paper mills, which his family had had ownership of since the beginning of the eighteenth century when they had come to Britain as Huguenot refugees. He developed an interest around this time in the welfare of the poor and was one of the first to adopt measures to give labourers access to allotments. He also took up the issue of Poor Law administration, and from 1847, for fifty years, was chairman of the Whitchurch Board of Guardians. Portal was also chair of the Basingstoke Union for a considerable period, promoted adult education and circulating libraries, and was heavily involved in the temperance movement. Portal joined the LSWR board in 1861, and held the position of deputy chairman between 1875 and 1892, after which he was the company's chairman until 1899, when he retired. He died on 14 September 1905.[1042]

[1041] Michael S. Moss, 'Pirrie, William James, Viscount Pirrie (1847–1924)', *Oxford Dictionary of National Biography, online edn.*, (January 2008), http://www.oxforddnb.com/view/article/35534, (10 December 2013)
[1042] *South Western Gazette*, June 1891, p.8; *South Western Gazette,* March 1899, p.5; *South Western Gazette*, April 1899, p.5-6; *South Western Gazette*, October 1905, p.9

Scott, Archibald – *Traffic Manager*, *1852-1870; General Manager, 1870-1884; Director, 1885-1902*

Archibald Scott joined the LSWR as its traffic manager in 1852. In 1870 he was made the company's general manager, and held this post until his retirement at the end of 1884. At this point he was elevated to the board, and held his seat until 1902, when he left it because of old age. He died on Tuesday 6 December 1910 at his home in Surbiton, only five days before his successor as general manager, Sir Charles Scotter.[1043]

Scotter, Sir Charles – *General Manager, 1885-1897; Director, 1899-1910*; *Deputy-Chairman, 1899-1904; Chairman, 1904-1910*

Charles Scotter was born in Hull on 22 October 1835 to Joseph and Mary Scotter. At the age of eighteen he joined the Manchester, Sheffield and Lincolnshire Railway as a junior clerk at its Hull goods offices. His rise in the company was rapid and by 1860 he was made passenger superintendent at Hull, after which, in 1866, he was appointed the MSLR's continental agent. In 1872 he was appointed the company's assistant goods manager, and a year later became full goods manager. He joined the LSWR as its general manager in 1885, a position he held until his retirement and elevation to the board at the end of 1897. Such was his success as the company's general manager that in 1895 he was knighted. In 1899 Scotter became the company's deputy chairman and its chairman in 1904. He held this position until his death at his home in Kingston on 13 December 1910.[1044]

Strapp, John – *Resident Engineer, 1853-1870*

Very little is known about John Strapp, apart from the fact that he was the LSWR's Resident Engineer between 1853 and 1870. He resigned after serious financial irregularities were found in the Engineering Department.[1045]

[1043] *South Western Gaazette*, 1 January 1911, p.8; *The Times*, 7 December 1910
[1044] TNA, RAIL 463/305, Manchester, Sheffield and Lincolnshire Railway Company, Staff register 1, p.398; *The Times*, 14 December 1910; *South Western Gaazette*, 1 January 1911, p.8-9
[1045] TNA, RAIL 411/216, Special Committee Minute Book, Meeting as to the future mode of maintaining the lines, 30 August 1855, p.181 and 8 November 1855, p.202; Williams, R.A., *The London and South Western Railway*, Volume 2, p.302-3; TNA, RAIL 411/220, Special Committee on Permanent Way Department, 5 May 1870, p.19 and 30 June 1870, p.141

Urie, Robert – *Works Manager, 1895-1912; Locomotive Engineer, 1912-1922*

Robert Wallace Urie was born in Ardeer, Scotland, on 22 October 1854. He was educated at Glasgow High School and in 1869 had an apprenticeship at Gauldie, Marshall & Co.; Dubs & Co., and William King & Co. Various locomotive builders employed him thereafter as a draughtsman, and in 1885 he joined the staff of the Caledonian Railway's St Rollox Works, and became chief draughtsman in 1890 and Works manager in 1896. He was appointed the LSWR's Locomotive Works Manager in 1897, and when its chief mechanical engineer, Dugald Drummond, died in 1912, he became the company's locomotive engineer. He retired in 1922 on the absorption of the LSWR into the Southern Railway, and died at his home in Largs on 6 January 1937.[1046]

Verrinder, Edgar William – *Superintendent of the Line, 1874-1882; Traffic Superintendent, 1882-1893*

Edgar William Verrinder, born in either 1836 or 1837, joined the LSWR as an apprentice clerk at Woking in 1851. He was moved to Wimborne in 1852, where he was made a full clerk in 1855. In 1856 he was relocated to Fareham, then to the Goods Department in Nine Elms in 1858 and in 1859 he was appointed station agent at New Godalming Station. Agencies at Andover followed in 1860 and then at Barnstaple in 1862. He moved into management in 1863, when he was posted as superintendent of the North Devon Line. A year later he was appointed superintendent at Waterloo Station and in 1868 he became Metropolitan district superintendent. He succeeded William Williams as superintendent of the line in 1874, and was made Traffic Superintendent in early 1882. This post he held for eleven years until his death from an unknown illness at the age of fifty-six on 23 July 1893.[1047]

Walker, Sir Herbert Ashcombe – *General Manager, 1912-1922*

Herbert Walker was born in 1868 and educated at the North London Collegiate School, Camden Town. He also received schooling in Burges and privately. He joined the London and North Western Railway as a clerk in the district superintendent's office at Euston in 1885, after which he became outdoor assistant to the company's superintendent of the line in 1889. In December

[1046] Casserley, *London and South Western Railway Locomotives*, p.16-18; Finlayson, Jock, 'Robert William Urie', undate, http://www.steamindex.com/people/urie, (6 December 2013); *Railway Magazine*, January 1913, p.77

[1047] *South Western Gazette*, 1 August 1893, p.9-12; TNA, RAIL 411/492, Clerical staff character book No. 2, p.2

1893 he was appointed assistant district superintendent of the LNWR's Southern Division, and after nine years he was promoted to superintendent. He was made assistant superintendent of the line in 1909 and after only a year became outdoor goods manager of the Southern Division. He was headhunted for the position of LSWR general manager in late 1911 and started on 1 January 1912. During the First World War Walker held the position as head of the Railway Executive Committee, which managed Britain's railway throughout the conflict, and for his services to the nation he was knighted in 1915. In 1923, when the Southern Railway was formed, he became its first general manager. On his retirement in 1937 he became a director of the company and held this seat until the nationalisation of all Britain's railways on 1 January 1948. He died in London on 29 September 1949.[1048]

White, George Turner – *Superintendent of the Line, 1893-1899*

George Turner White was born on 28 February 1854. At the age of fifteen he joined the company as a telegraph clerk at Cosham Station, where his father was the station agent. After holding various positions he was appointed as a clerk at Exeter Station in 1871 and then, in 1875, became a relief agent. Between 1876 and 1893 he held the post of western district (division) superintendent, after which, on the death of William Verrinder, he became superintendent of the line. He held this post until his death on 17 March 1893.[1049]

Williams, William – *Superintendent of the Line, 1868-1874*

William Williams was born in either 1820 or 1821. He joined the LSWR as a clerk at Nine Elms in 1840. After holding the position of agent at Romsey from 1846, Basingstoke from 1852 and Exeter from 1860, in 1862 he was appointed the superintendent of Waterloo station. In 1864 Williams became the company's passenger superintendent and after four years, on the death of Godson, he was appointed superintendent of the line. He held this post until his death in 1874.[1050]

[1048] *South Western Gazette*, 1 November 1911, p.9; *South Western Gazette*, 1 December 1911, p.10; *South Western Gazette*, 1 February 1915, p.7; Klapper, *Herbert Walker's Southern Railway*
[1049] *South Western Gazette*, 1 October 1893, p.1-2; *South Western Gazette*, 1 April 1899, p.9-10; TNA, RAIL 411/492, Clerical staff character book No. 2, p.674
[1050] TNA, RAIL 411/491, Clerical staff character book, p.464

Abbreviations

ASRS	Amalgamated Society of Railway Servants
BALR	Basingstoke and Alton Light Railway
BER	Bristol and Exeter Railway
DofD	Directory of Directors
DCR	Devon and Cornwall Railway
GKLR	Guildford, Kingston and London Railway
GER	Great Eastern Railway
GCR	Great Central Railway
GCRJ	Great Central Railway Journal
GNCR	Great Northern and City Railway
GKLR	Guildford, Kingston and London Railway
GWR	Great Western Railway
H&W	Harland and Wolff Shipbuilders
LBSCR	London, Brighton and South Coast Railway
LCCT	London County Council Tramways
LCDR	London, Chatham and Dover Railway
LNER	London and North Eastern Railway
LNWR	London and North Western Railway
LSWR	London and South Western Railway
LUT	London United Tramways
M.P.	Member of Parliament
MSLR	Manchester, Sheffield and Lincolnshire Railway
MHR	Mid-Hants Railway
MR	Midland Railway
MSWJR	Midland and South Western Junction Railway
MVL	Meon Valley Line
NER	North Eastern Railway
NSR	North Staffordshire Railway
OR	Operating ratio
P&O	Peninsular and Oriental Steamship Company
RCH	Railway Clearing House
ROCE	Return on capital employed
ROCS	Return on capital spent
SDC	Southampton Dock Company
SDJR	Salisbury and Dorset Junction Railway
S&DJR	Somerset and Dorset Joint Railway
SER	South Eastern Railway
SR	Southern Railway
SWG	South Western Gazette
SWM	South Western Magazine
SWWJR	Staines, Wokingham and Woking Junction Railway
SYR	Salisbury and Yeovil Railway
WCR	Waterloo and City Railway
WSL	White Star Line
WRMR	Whitby, Redcar and Middlesbrough Railway
WLER	West London Extension Railway

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